Portfolio

Agnese Fiore Rusconi

Building Engineering-Architecture

About me:

03/09/1999 Lecco, Italy

Via Lecco 37, 23851
Galbiate (LC), Italy

+39 3341886871

agnesefiore99@gmail.com

linkedin.com/in/agnese-fiore-rusconi

I graduated in Building Engineering-Architecture from Politecnico di Milano, with a strong interest in sustainable architecture and solutions that reduce the environmental impact of buildings.

During my studies, I had several opportunities to focus on these topics, both in design projects and research work.

I'm particularly interested in the renovation and adaptive reuse of existing buildings, as a way to extend their life cycle and give them a new purpose. I believe that sustainable design and responsible use of resources are essential in shaping the future of the built environment.

Content:

A_ ARCHITECTURAL PROJECTS

A1 **THE RESILIENT ART BOX:**
Climate-sensitive regeneration of Whitehouse Street, Bristol (UK)
2023-2024 **04-13**

A2 **CUBICO:**
Office building with passive strategies and energy optioneering analysis, Milan (IT)
2022 **14-21**

A3 **MONT'E PRAMA – Archeological site:**
Proposal for an open-air museum for the international design competition, Oristano (IT)
2022 **22-27**

A4 **CAPM – Contemporary Art Palma de Mallorca:**
Museum integrated into the urban fabric, Palma de Mallorca (ES)
2022 **28-33**

A5 **INTERSEZIONE URBANA:**
Building systems and technology for a multifunctional hub – Galbiate (IT)
2021 **34-39**

Content:

B_CONSERVATION & SURVEY STUDIES

B1 CONSERVATION STUDY OF LAORCA CEMETERY:

Survey and decay analysis of historic structures – Laorca Cemetery, Lecco (IT)
2022 **40-45**

C_HANDS-ON EXPERIENCES

C1 FINCA EL ZOPILOTE:

Natural building techniques and off-grid design – Volunteering in Ometepe Island (NI)
2024 **46-47**

C2 LONG WAY HOME:

Eco-construction and sustainable architecture – Volunteering in Comalapa (GT)
2024 **48-49**

A1 THE RESILIENT ART BOX:

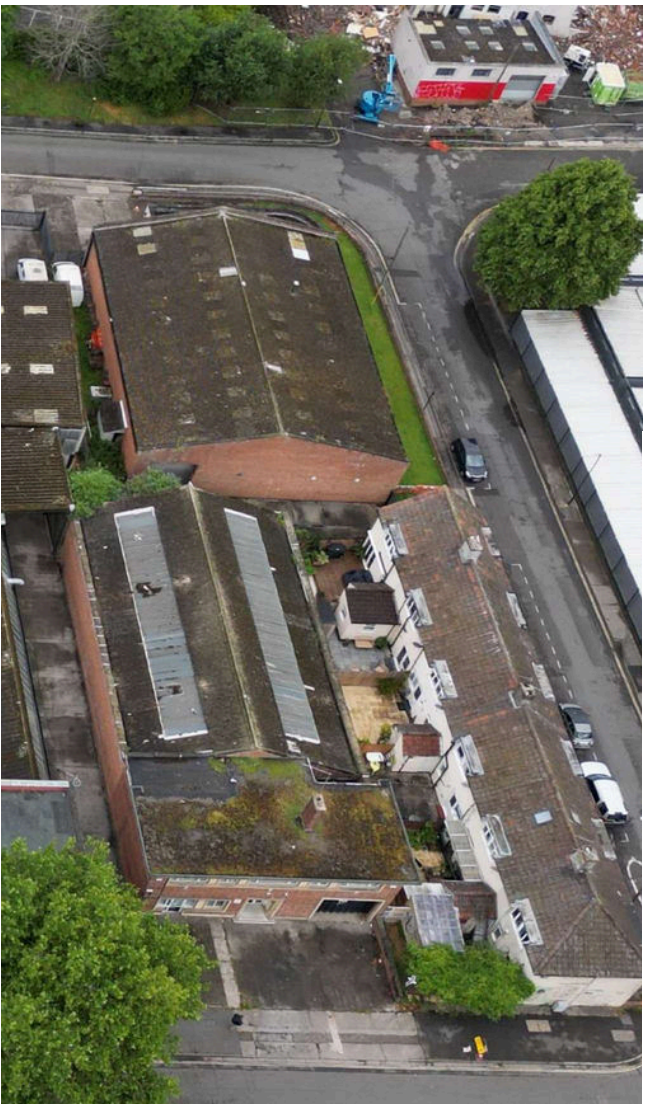
2023–2024, Bristol (UK).
Team: A. Fiore Rusconi, M. Baruffaldi, S. Rebaioli
Supervisor: Profs. F. Pittau, C. M. Salvin, M.C. Rampini

The **graduation project** of my single-cycle degree envisions the **regeneration** of a former industrial site in Bristol through a resilient and inclusive urban strategy, designed for the international competition Reinventing Cities.

The proposal combines the adaptive reuse of existing buildings with new construction, prioritizing **climate resilience**, **community** engagement, and **circular design**. Special attention is given to flood risk mitigation, the reuse of demolition waste, and the creation of accessible public spaces. A key feature is the informal theatre, where reused steel components and high-performance envelopes reflect the project's environmental approach.

Community-driven design and sustainable innovation come together to shape a new cultural landmark for the neighborhood.

THE RESILIENT ART BOX



CLIMATE SENSITIVE

regeneration of Whitehouse Street:

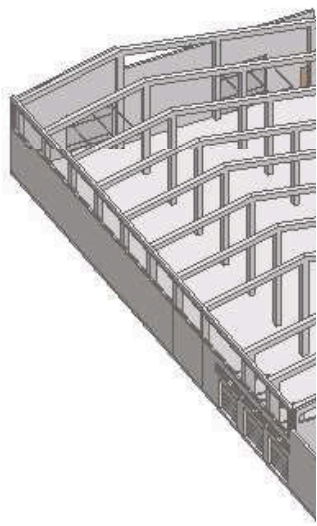
CIRCULAR SOLUTIONS

for an art hub in Bristol (UK)

Aerial view of the regeneration area in Whitehouse Street.

POINT CLOUD → BIM

The BIM model was enriched with detailed information about existing materials and structures, allowing for a precise **quantity take-off** of all construction elements. This process was essential to estimate how much material would be demolished and how much could be reused in the project, supporting the circular design approach. Components to be retained or removed were categorized and measured in terms of area and volume, ensuring a solid basis for material flow analysis and sustainable planning decisions.



MODEL

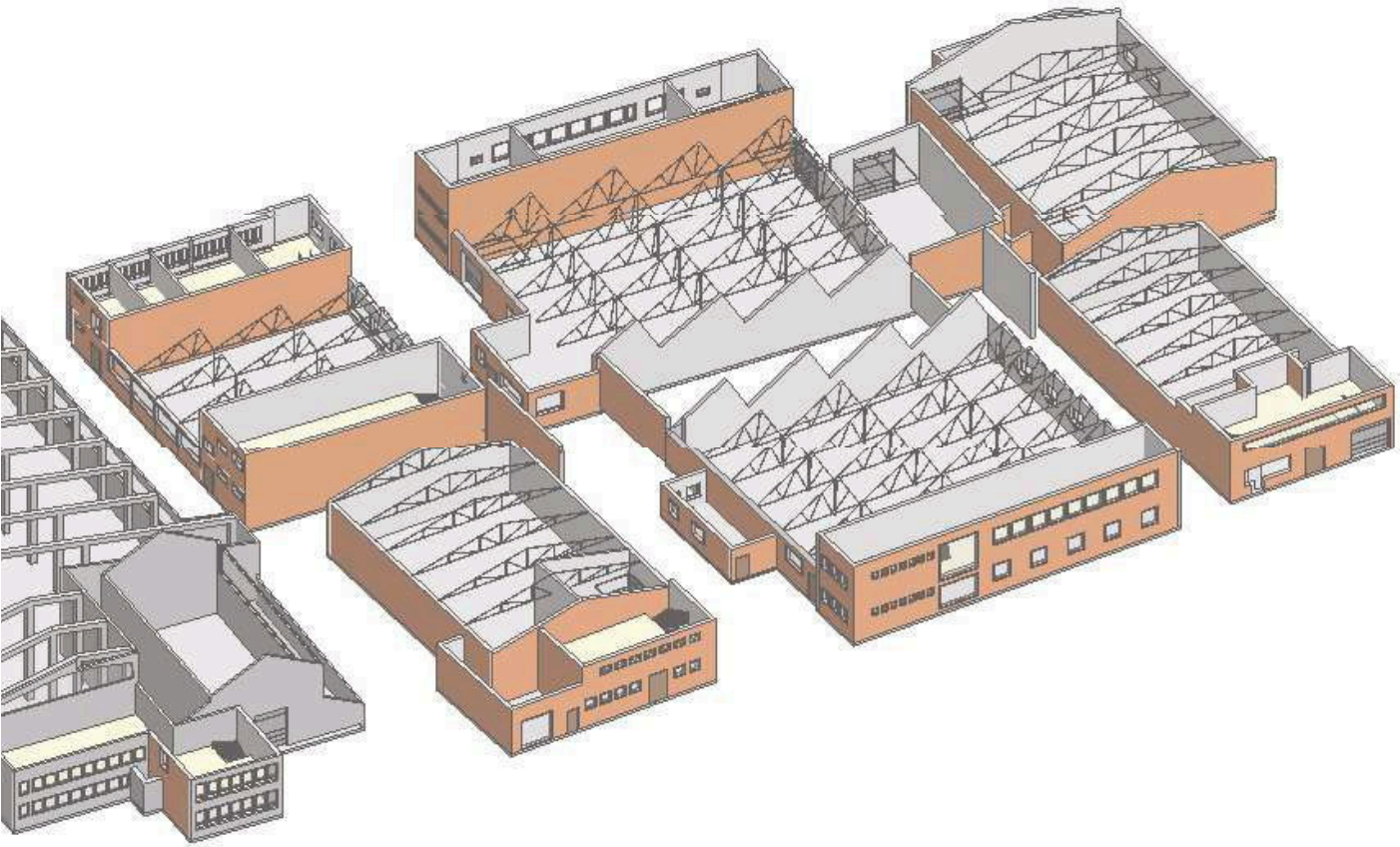
Due to the absence of existing survey material in the competition brief, my thesis partners and I carried out a comprehensive site investigation to lay the foundation for our design work.

Using a **360° camera**, a digital camera, and manual **measurements**, we generated a detailed point cloud through photogrammetry with Metashape.

The model was later scaled using on-site reference markers to ensure accuracy.

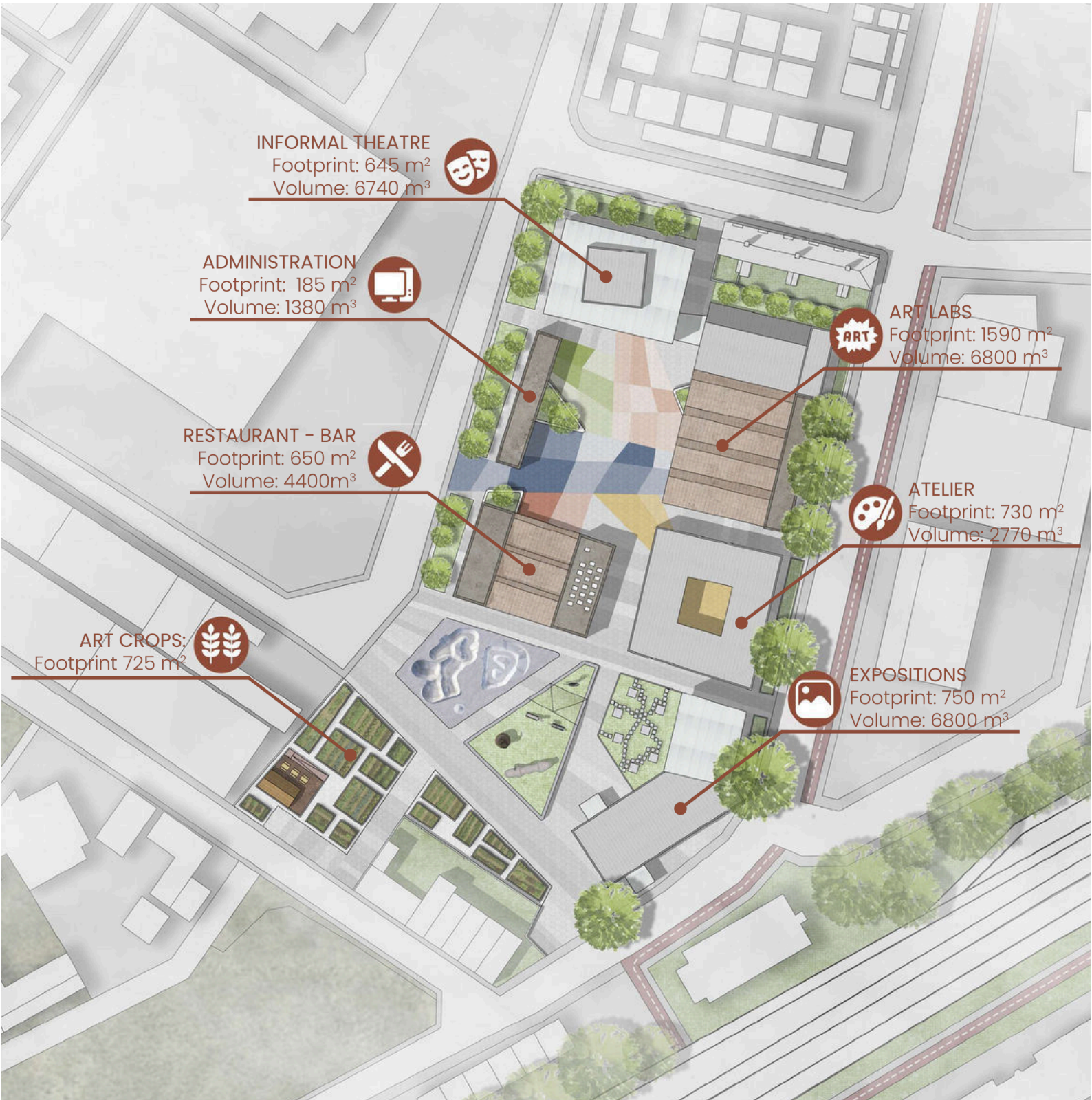
From this, we developed a BIM model in Revit, allowing us to extract floor plans and elevations and to deeply understand the site's spatial and architectural features.

This precise and self-directed survey phase was crucial in shaping a context-aware and grounded proposal.

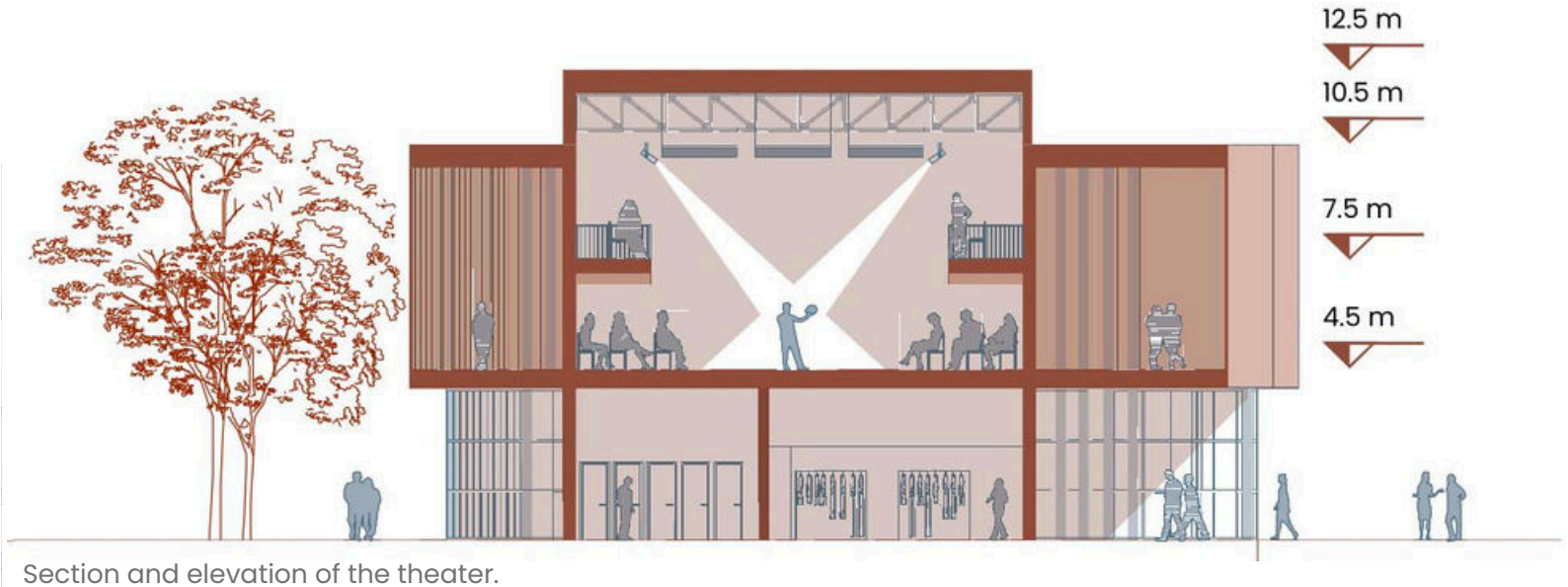


Three-dimensional BIM model generated from the point cloud.

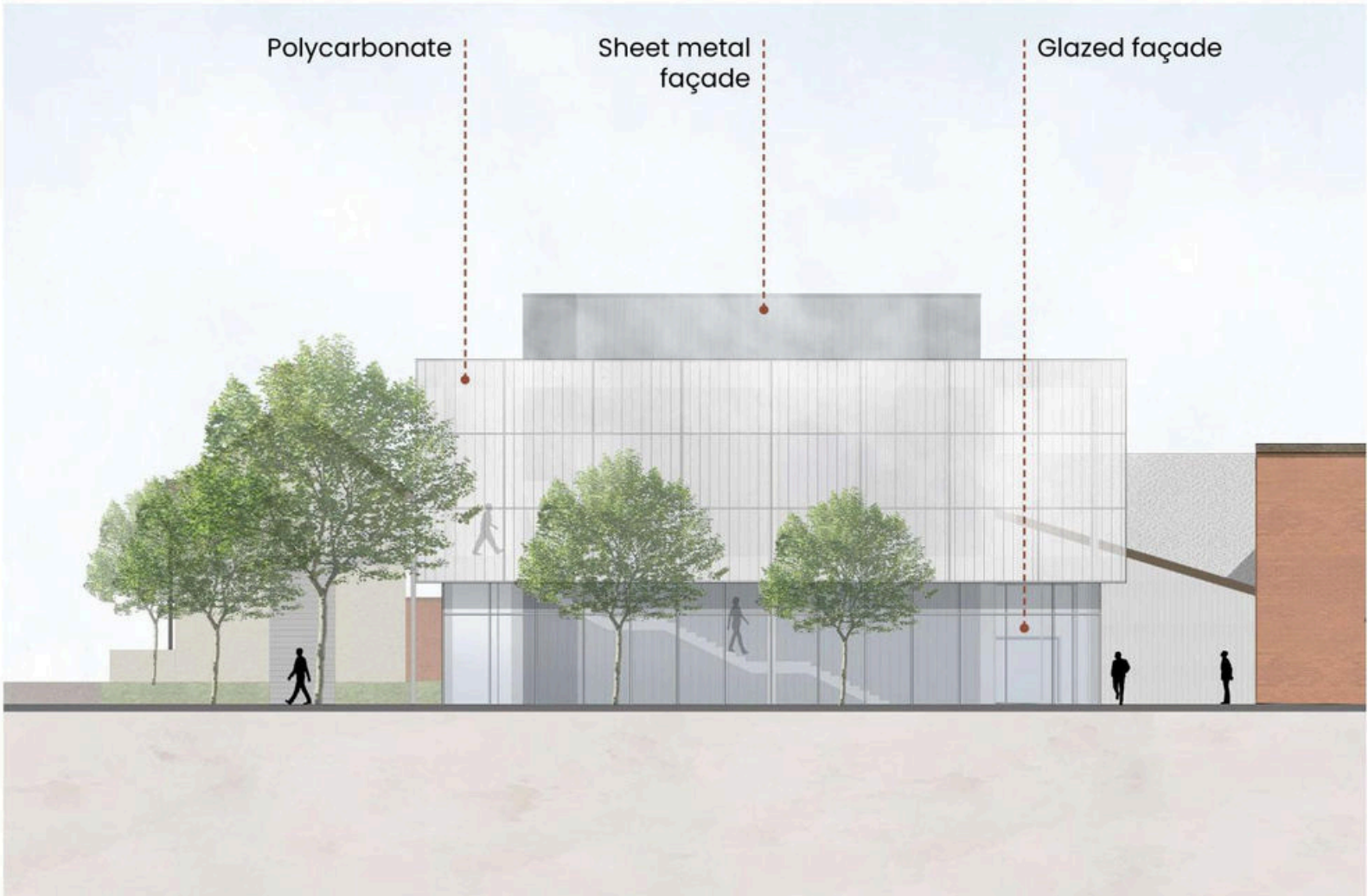
The **masterplan** was developed based on site analyses and community needs, aiming to create inclusive and vibrant spaces for local residents, artists, and visitors. The project revolves around two main public squares: one **introverted** and protected by the surrounding buildings, fostering a sense of neighborhood and community life, and one **extroverted**, open and dynamic, welcoming passersby with cultural events, skate ramps, and exhibition spaces. Each building is carefully positioned and connected through a colorful paving system that guides movement and highlights entrances. The integration of vegetable gardens strengthens the link with the adjacent urban farm, promoting local food production and creative outdoor activities. Improvements to the street network and cycling infrastructure further enhance accessibility and continuity throughout the area.

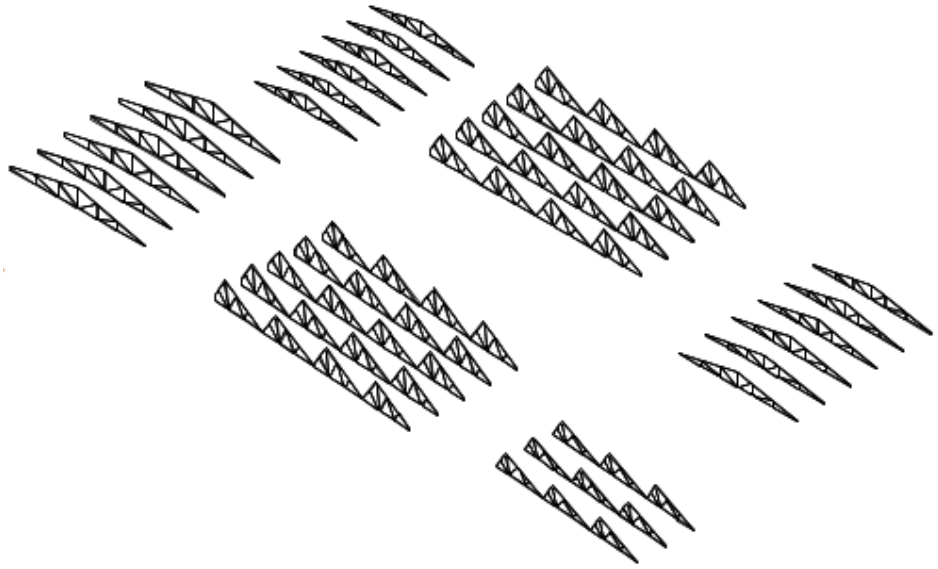


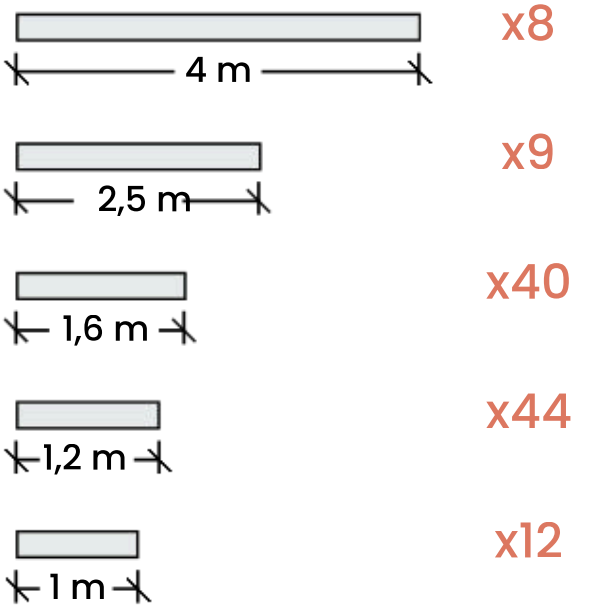
THEATRE: technical insights



Section and elevation of the theater.



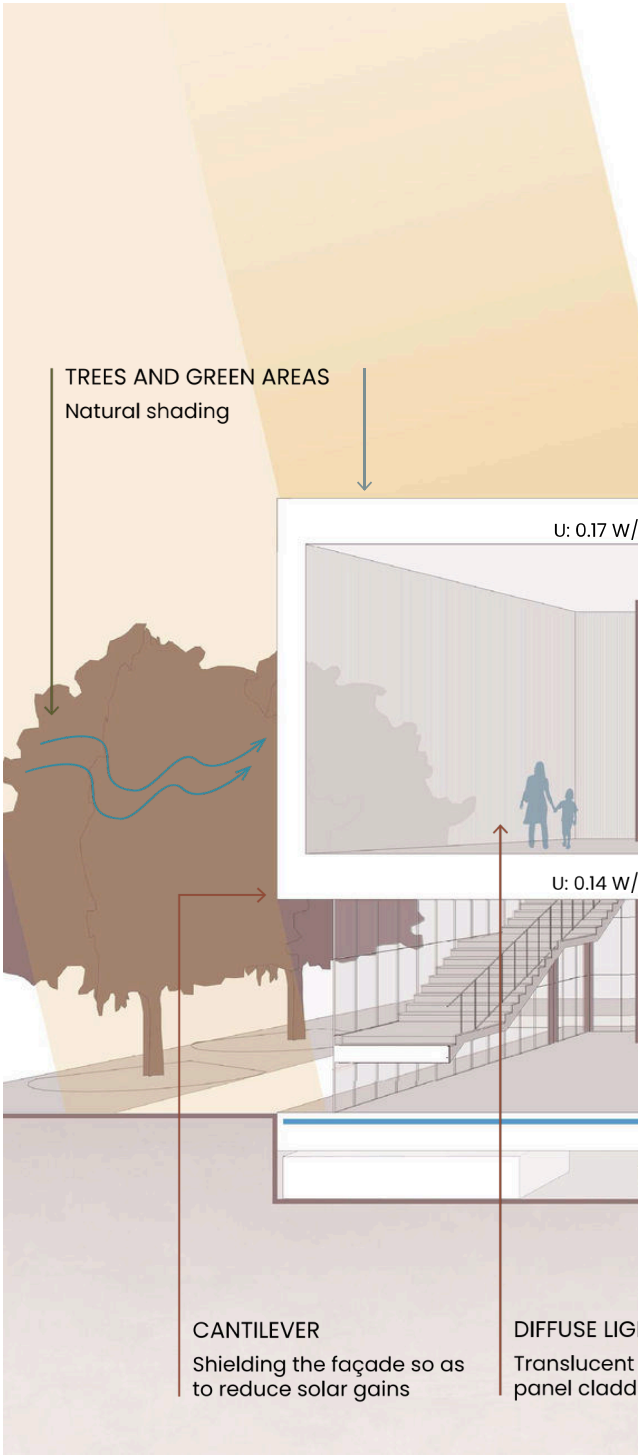




A specific focus is placed on the newly designed informal theatre, where the **"box in the box"** concept is clearly expressed by separating the external, unheated polycarbonate foyer from the heated metal-clad core. This design not only reflects the architectural intent but also integrates both passive and active strategies to ensure comfort and efficiency.

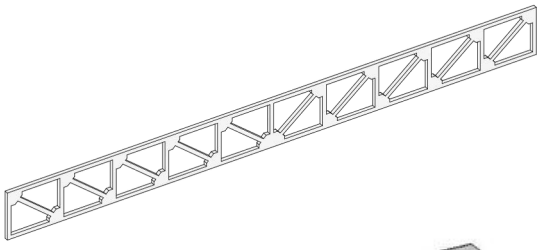
The envelope's construction layers were selected based on circularity principles, aiming to **reduce waste** and **maximize reuse**. The steel structure enhances the flexibility and recyclability of the building, with several elements, such as the trusses and façade grid, made from reused components salvaged from demolition.

The theatre is also designed for Life Cycle Assessment and energy analysis, enabling a comprehensive evaluation of environmental impacts and energy performance throughout its life span.

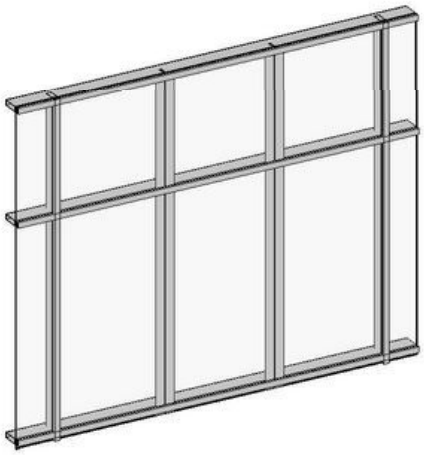


Schematic design during winter season.

REUSE APPLICATIONS



TRUSS



GLAZED FACADE

HYPER-INSULATED OPAQUE ENVELOPE
High insulation performance and appropriate thermal inertia of the central core

SOUND-ABSORBING CEILING
Improved acoustic comfort in the auditorium

MECHANICAL VENTILATION
Indoor air exchange

U: 0.17 W/m²K

U: 0.17 W/m²K

U: 0.75 W/m²K

U: 0.16 W/m²K

U: 0.14 W/m²K

U: 0.50 W/m²K

U: 0.14 W/m²K

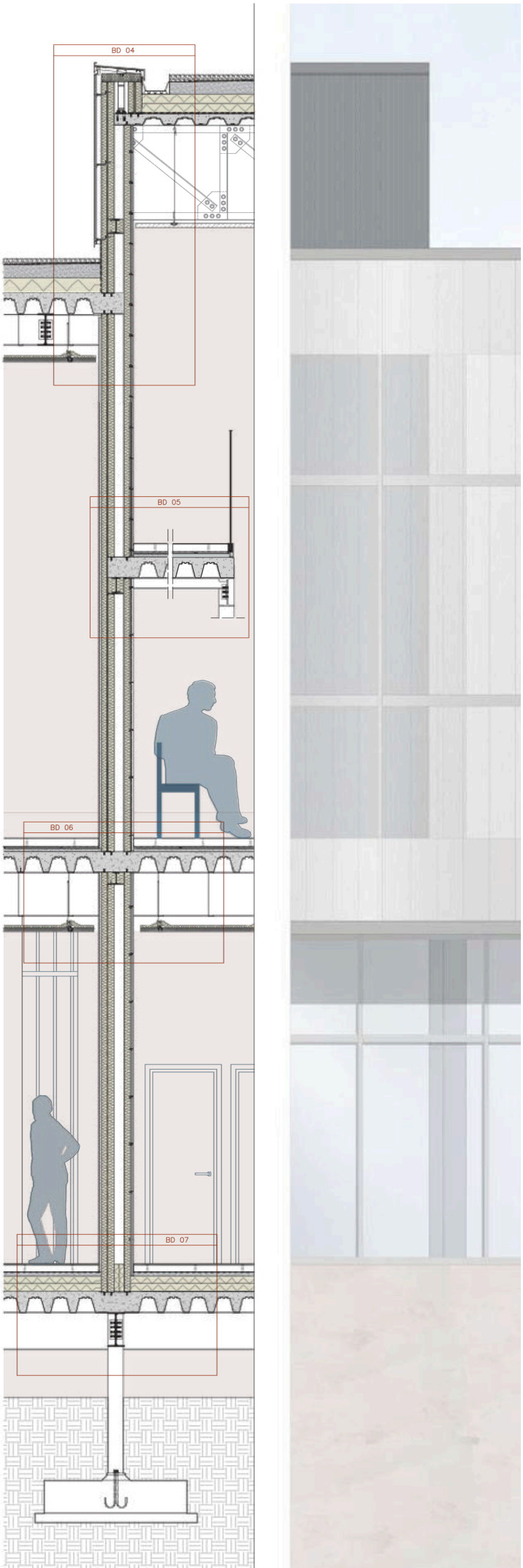
U: 1.00 W/m²K

U: 0.13 W/m²K

HTING
polycarbonate
ing

AERATED GROUND FLOOR
Removal of soil moisture and of radon gas

GEOTHERMAL HEAT PUMP
Space cooling via ceiling system



Finishing layer in mortar with recycled elements in raised access flooring - *Type: RESPO Terrazzo* - thk. 9 mm

Floating flooring in High Density P5 Moisture Resistant tongued and grooved chipboard with Hushfelt™ resilient layer, 240x60 cm - *Type: HUSH Panel 28* - thk. 28 mm

Levelling layer in dry sand and cement screed - *Type: Knauf Brio Dry Screed Floor Board - thk. 18 mm*

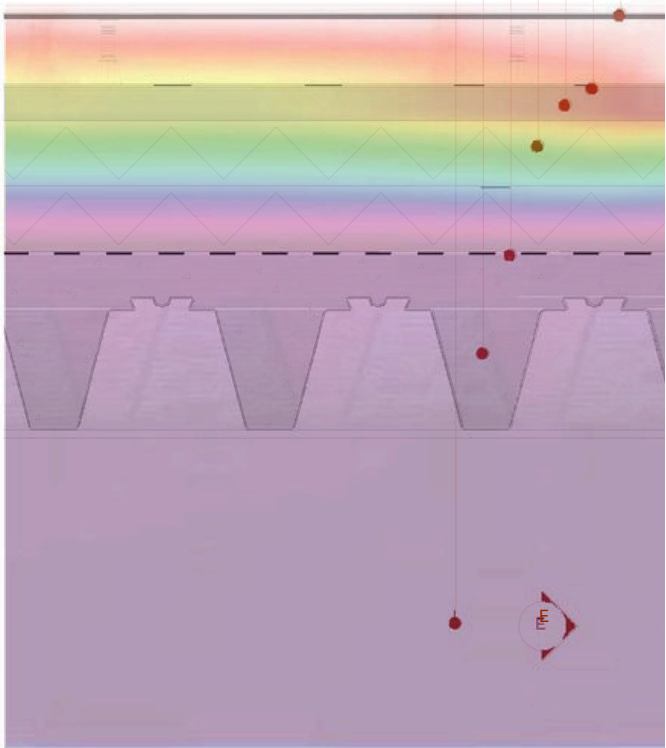
Rigid thermal insulation layer of mineral wool - *Type:ROCKWOOL Thermal ROCKFLOOR®* thk. 160 mm

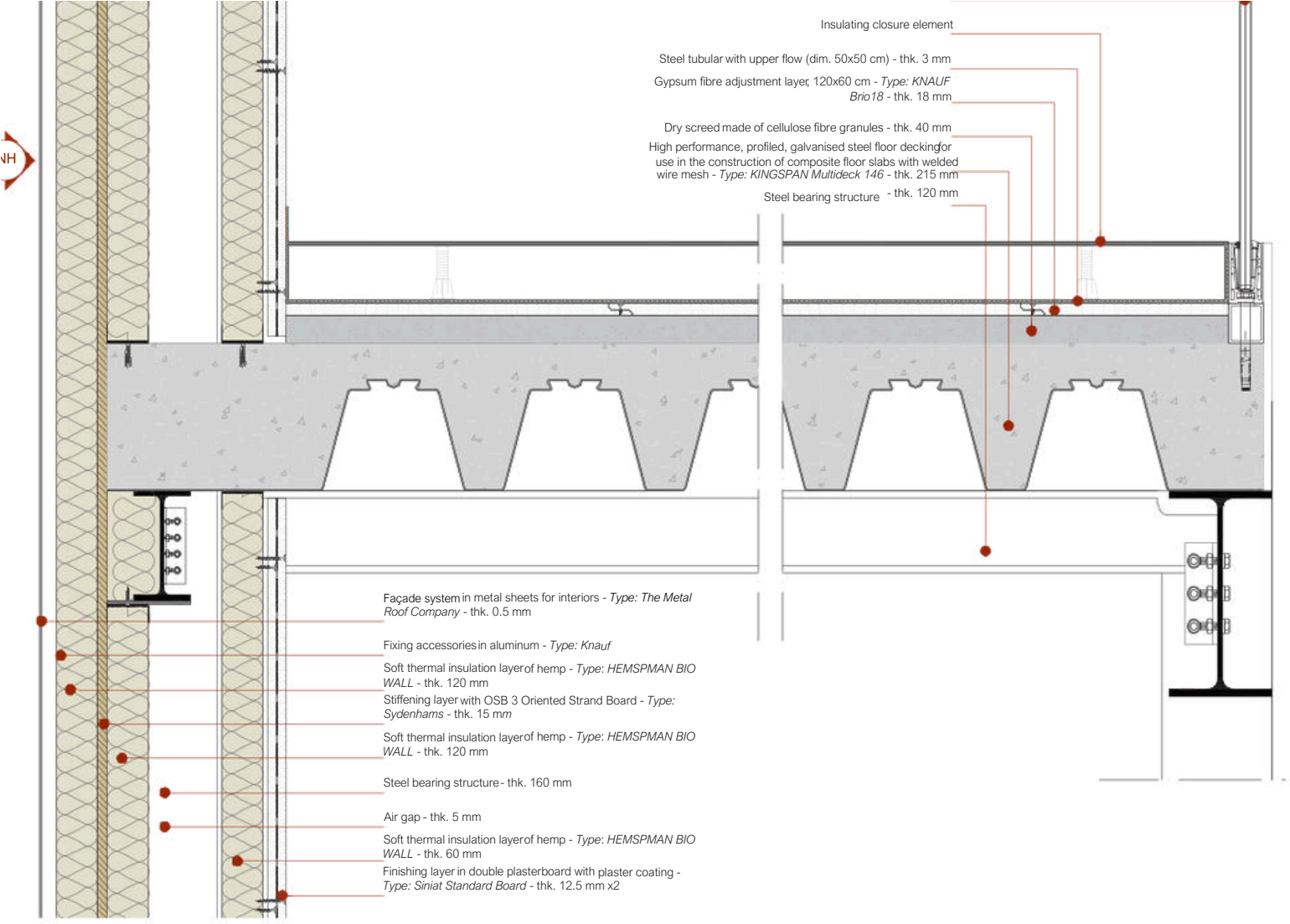
Waterproofing layer in bituminous base sheet with DERBITUMEN - *Type: DERBICOAT® T 2.5* - thk. 2.5 mm

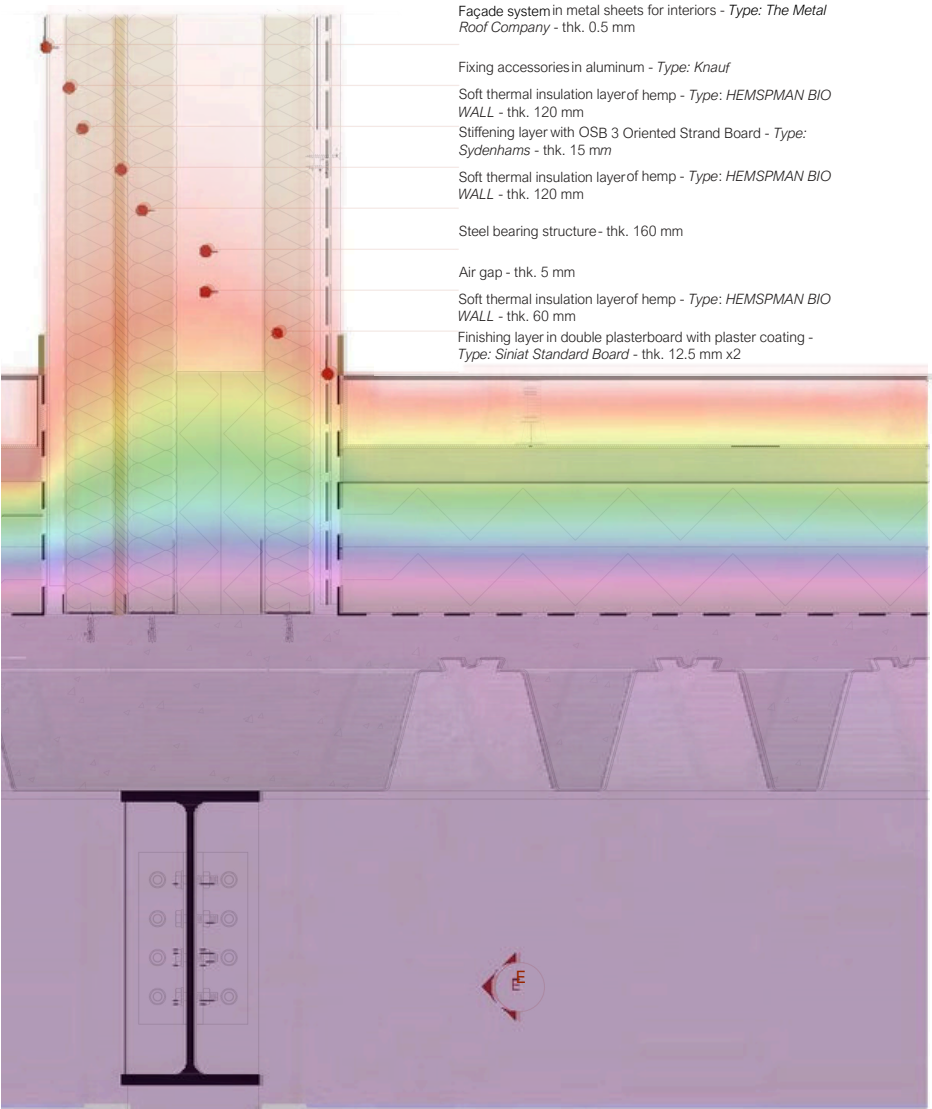
High performance, profiled, galvanised steel floor decking for use in the construction of composite floor slabs with welded wire mesh - *Type: KINGSPAN Multideck 146* - thk. 215 mm

Steel bearing structure - thk. 120 mm

INH




Insulating closure element
Steel tubular with upper flow (dim. 50x50 cm) - thk. 3 mm
Gypsum fibre adjustment layer, 120x60 cm - *Type: KNAUF Brio18* - thk. 18 mm
Dry screed made of cellulose fibre granules - thk. 40 mm
High performance, profiled, galvanised steel floor decking for use in the construction of composite floor slabs with welded wire mesh - *Type: KINGSPAN Multideck 146* - thk. 215 mm
Steel bearing structure - thk. 120 mm
Façade system in metal sheets for interiors - *Type: The Metal Roof Company* - thk. 0.5 mm
Fixing accessories in aluminum - *Type: Knauf*
Soft thermal insulation layer of hemp - *Type: HEMSPMAN BIO WALL* - thk. 120 mm
Stiffening layer with OSB 3 Oriented Strand Board - *Type: Sydenhams* - thk. 15 mm
Soft thermal insulation layer of hemp - *Type: HEMSPMAN BIO WALL* - thk. 120 mm
Steel bearing structure - thk. 160 mm
Air gap - thk. 5 mm
Soft thermal insulation layer of hemp - *Type: HEMSPMAN BIO WALL* - thk. 60 mm
Finishing layer in double plasterboard with plaster coating - *Type: Siniat Standard Board* - thk. 12.5 mm x2


Façade system in metal sheets for interiors - *Type: The Metal Roof Company* - thk. 0.5 mm
Fixing accessories in aluminum - *Type: Knauf*
Soft thermal insulation layer of hemp - *Type: HEMSPMAN BIO WALL* - thk. 120 mm
Stiffening layer with OSB 3 Oriented Strand Board - *Type: Sydenhams* - thk. 15 mm
Soft thermal insulation layer of hemp - *Type: HEMSPMAN BIO WALL* - thk. 120 mm
Steel bearing structure - thk. 160 mm
Air gap - thk. 5 mm
Soft thermal insulation layer of hemp - *Type: HEMSPMAN BIO WALL* - thk. 60 mm
Finishing layer in double plasterboard with plaster coating - *Type: Siniat Standard Board* - thk. 12.5 mm x2

Blow up and detail of the “box in the box”.

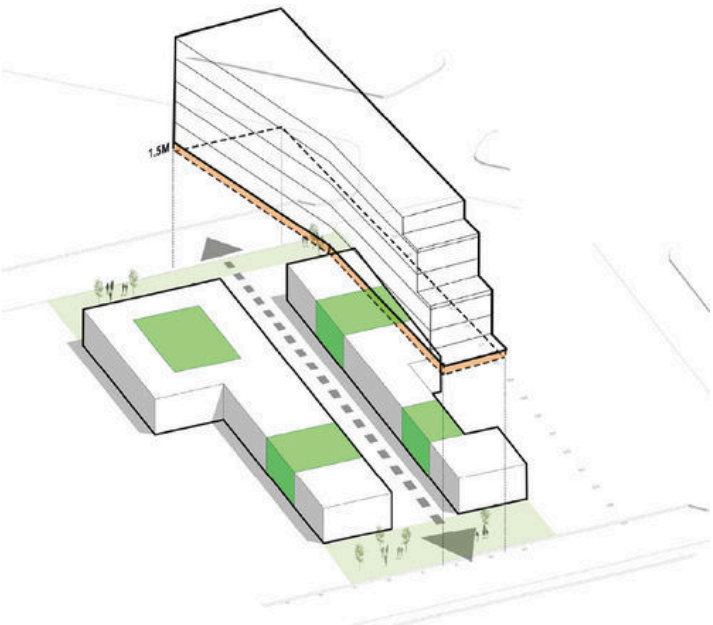
A2 CUBICO:

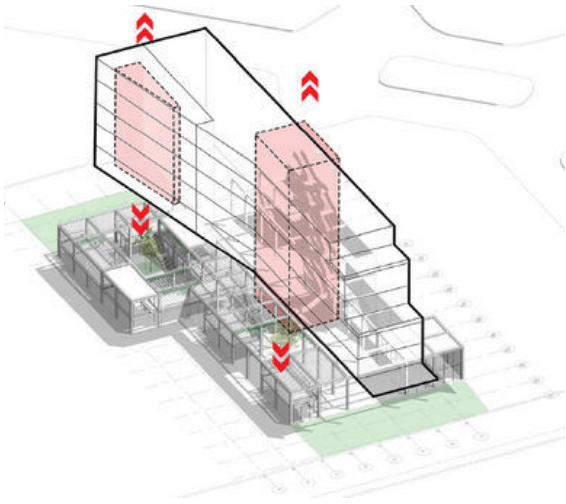
2022, Milan (IT).
Team: A. Fiore Rusconi, H. Abou Nassif, O. Abushady, M. Baruffaldi, A. Bashir, J. Calovolo, F. Fotouhi, M. Marotta, V. Megerdichi, F. A. Sobhy Mohamed Hassan, S. Vinayak Chelkar
Supervisor: Profs. G. Masera, M. Brasca

Set in a dense urban area of Milan, the project proposes a modular **office building** elevated on pillars to ensure **pedestrian permeability** and create a connection between two major streets. The ground level is activated by commercial units, while the suspended volume hosts co-working spaces and offices.

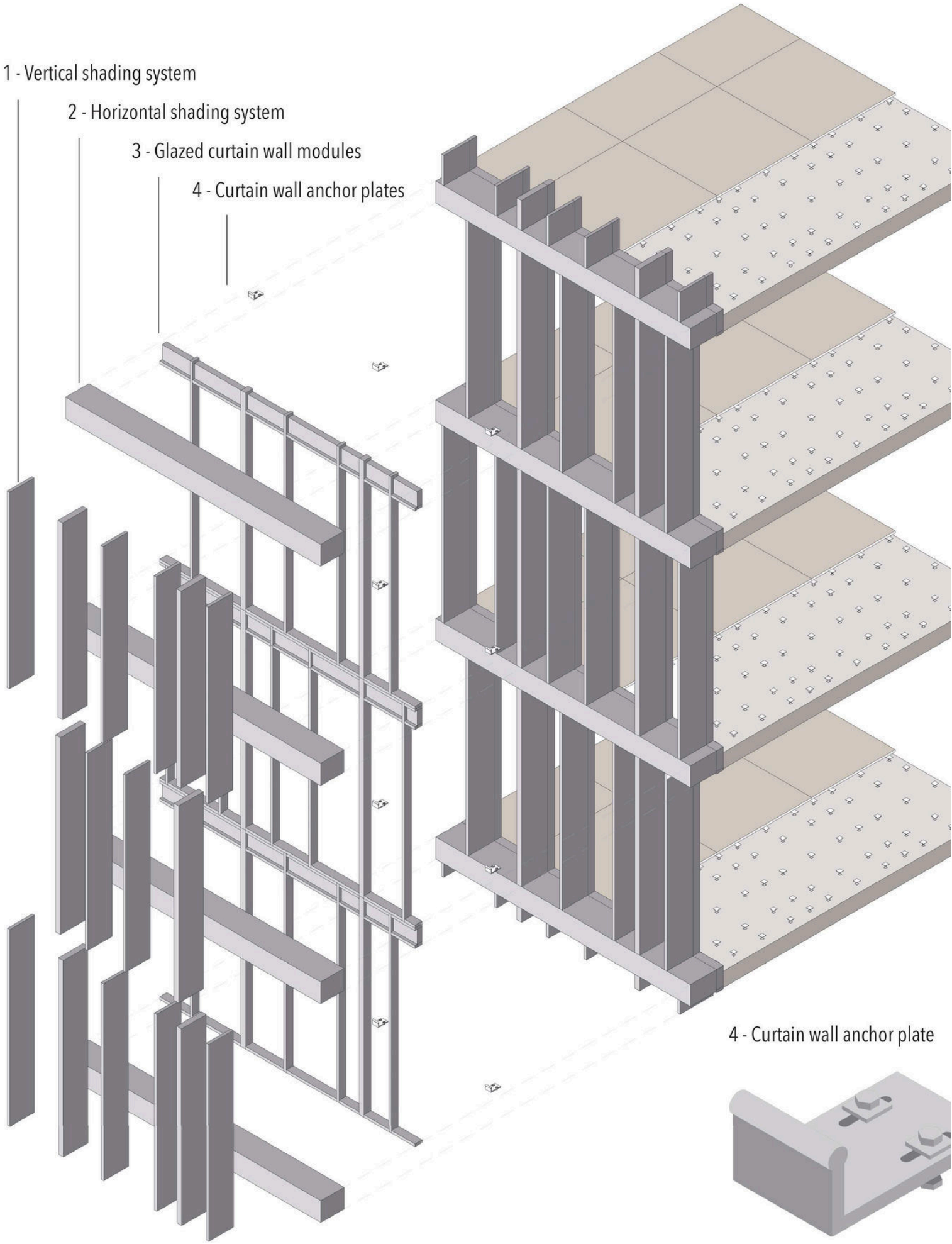
The architectural concept integrates **passive strategies** and energy analysis through Optioneering, aiming to optimize thermal comfort and overall performance. At the core, an atrium enables natural ventilation via the stack effect, complemented by green terraces and a rooftop with solar panels and shading elements.

The façades balance aesthetics and functionality through a fully glazed envelope, equipped with vertical and horizontal sun-shading devices, and a variety of cladding systems adapted to environmental conditions. Climatic site analysis informed both spatial distribution and technical solutions throughout the design process.

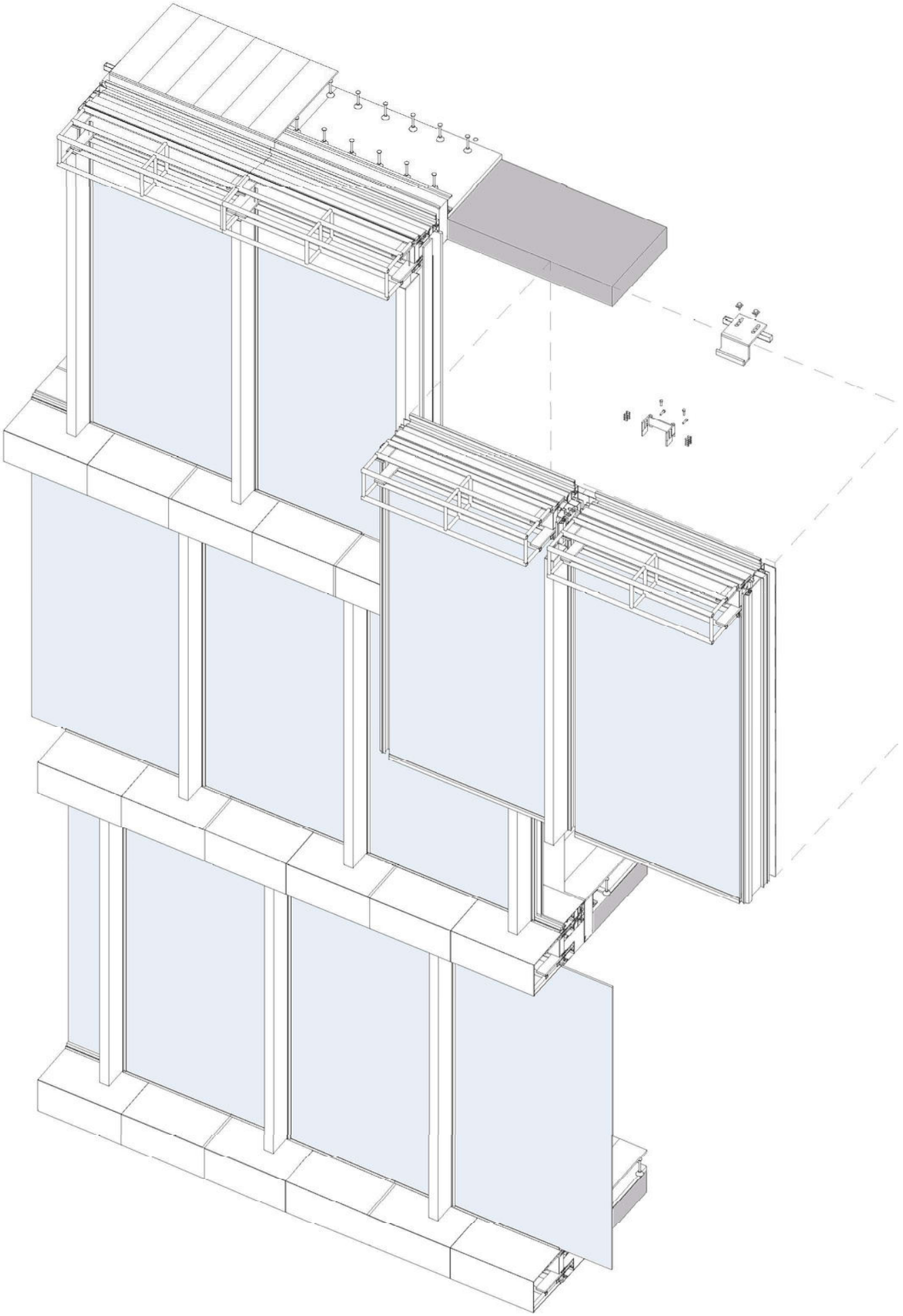


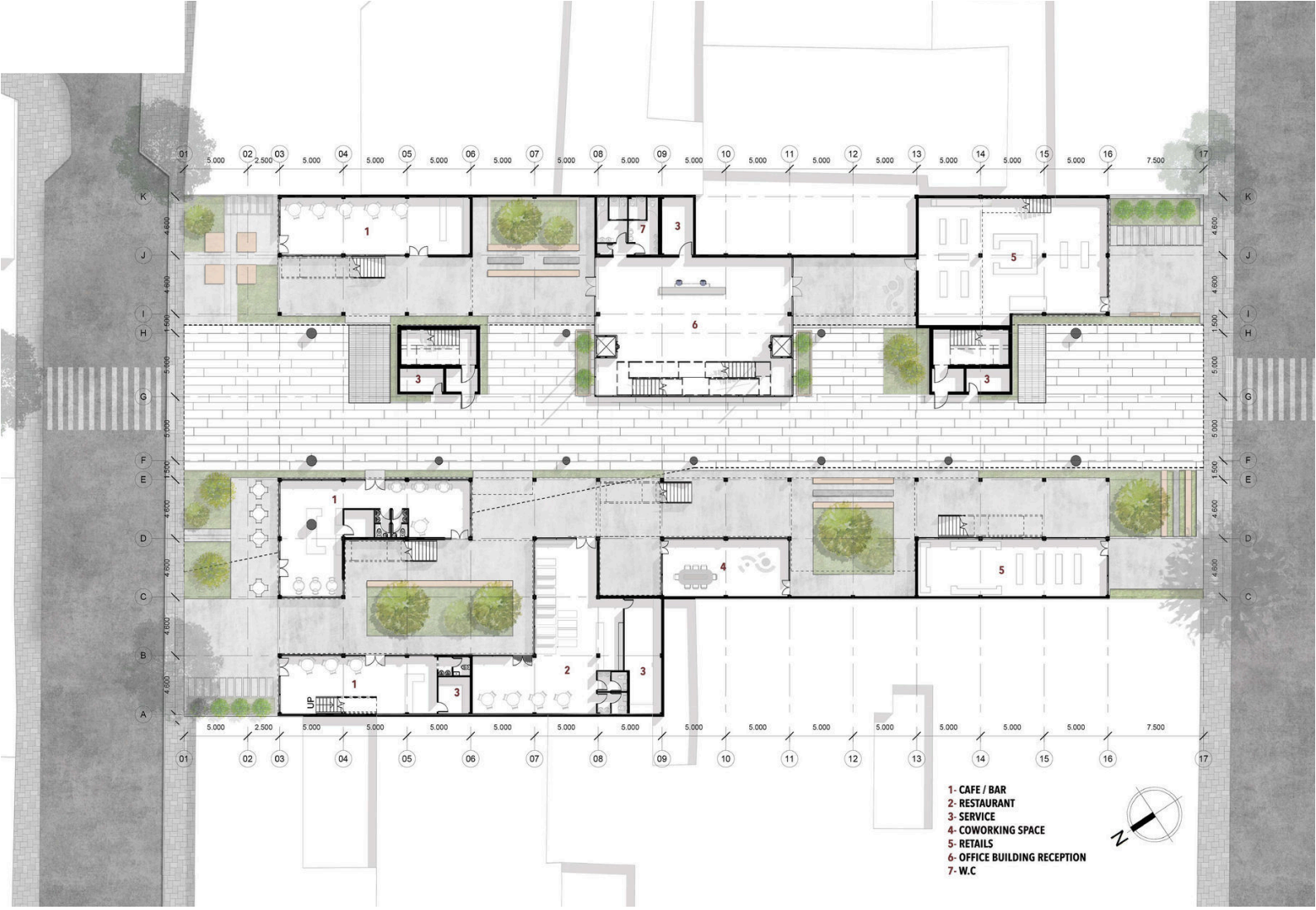


Design development of the permeability and the atrium.


1 - Vertical shading system
2 - Horizontal shading system
3 - Glazed curtain wall modules
4 - Curtain wall anchor plates
4 - Curtain wall anchor plate

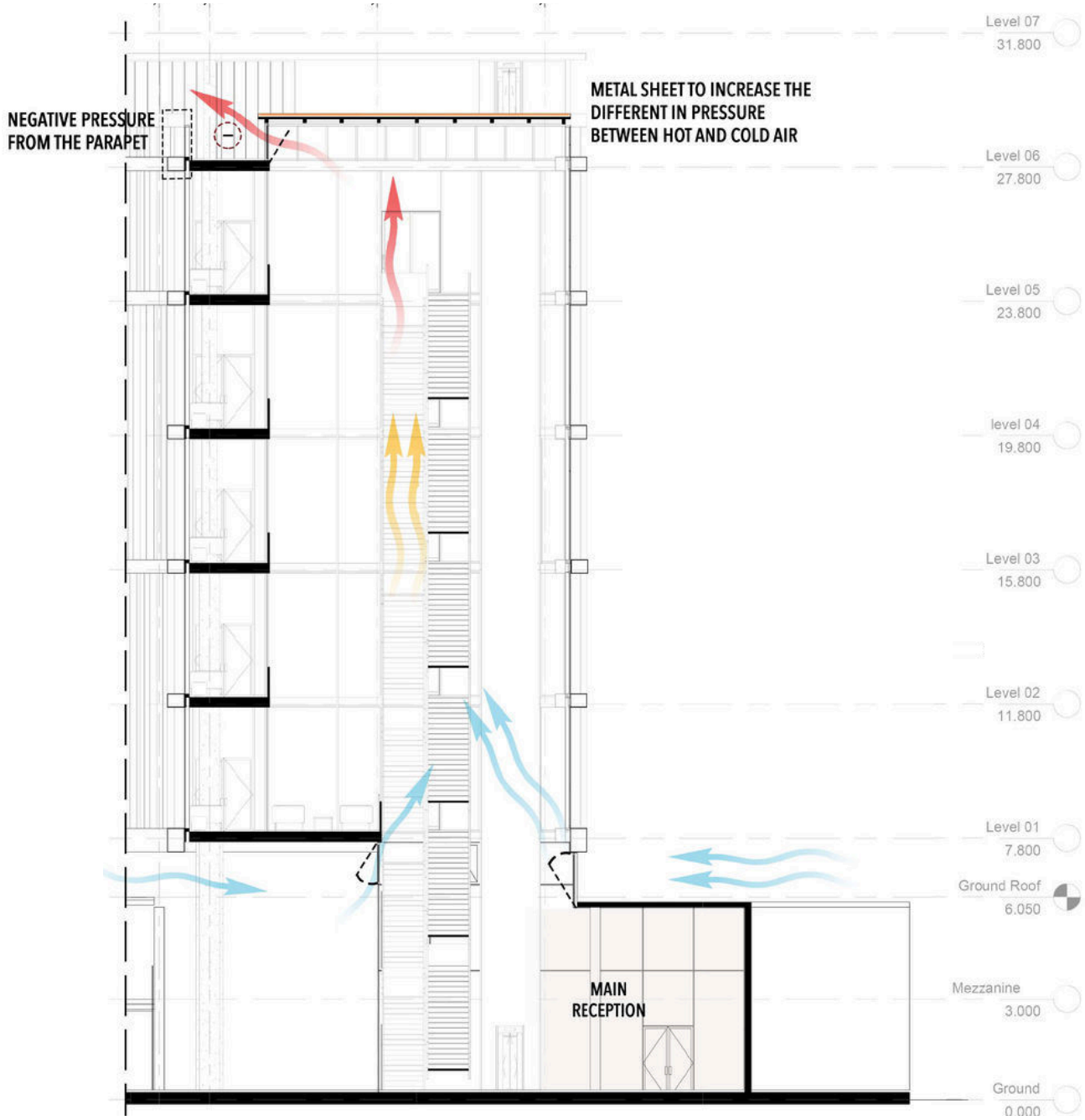
Shading system and curtain wall.





Ground floor plan.

Upper floors plan.



Transversal section of the atrium and longitudinal section of the whole building.

The central atrium of the building is designed to enhance **natural ventilation** through the **stack effect**. Warm air inside the building rises and escapes through the atrium's upper openings, creating a natural airflow that draws in cooler air from lower levels. This passive ventilation strategy reduces reliance on mechanical cooling, improving indoor comfort and energy efficiency throughout the year.

In parallel, an extensive optioneering analysis was conducted to optimize the building's **energy performance**. Various design components and materials were tested to approach the ideal balance between energy consumption and production. The goal was to align the building's performance as close as possible to the diagonal of the energy graph, where energy produced equals energy consumed, maximizing sustainability and minimizing environmental impact.

Energy production and consumption diagram.

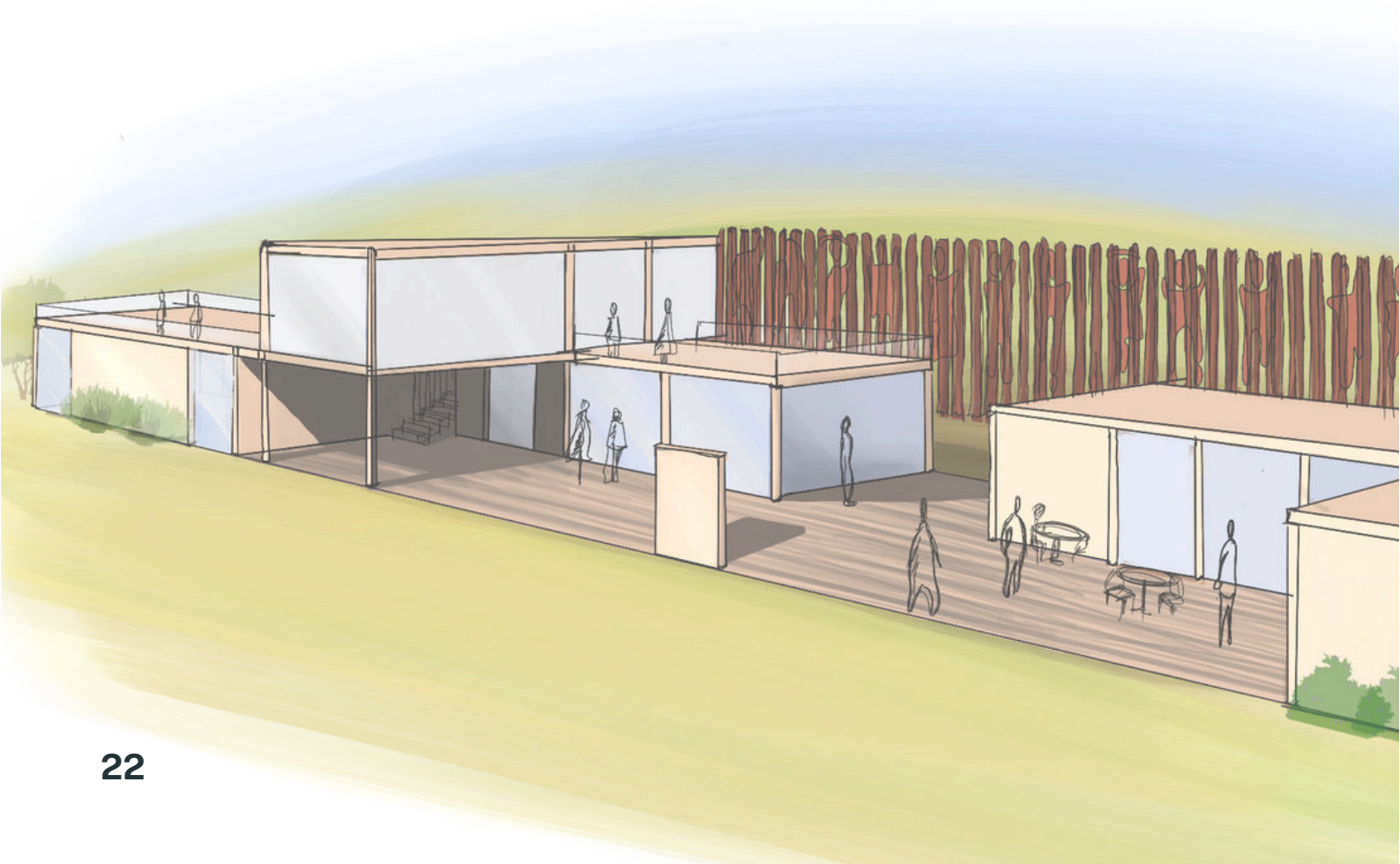
A3 MONT'E PRAMA - Archeological site:

2022, Oristano (IT).
Team: A. Fiore Rusconi, D. Ballabio, L. De Capitani, L. Vardeu
Team Leader: Architect R. Contardo

The Mont'e Prama archaeological site, located in central-western Sardinia near Cabras, was **discovered** by chance in **1974** when farmers unearthed fragments of large stone statues. Excavations revealed a unique necropolis dating back to the **Iron Age,** between the 9th and 8th centuries BCE, belonging to the Nuragic civilization, an ancient culture native to Sardinia.

Our project for the archaeological site **design competition** aims to honor and enhance the unique character of this evolving site, where the ancient **Nuragic statues**, known as the **Giants**, were discovered.

Instead of imposing a fixed structure, we propose a **dynamic and respectful** design that preserves the fragile remains, integrates with the landscape, and supports ongoing research. Inspired by local materials, colors, and vegetation, the architecture blends into the land while guiding visitors through a story of past, present, and future. A key architectural choice is the use of containers, selected for their flexibility and adaptability. They reflect the evolving nature of the site and allow for **reversible**, sustainable solutions that can grow with future discoveries.

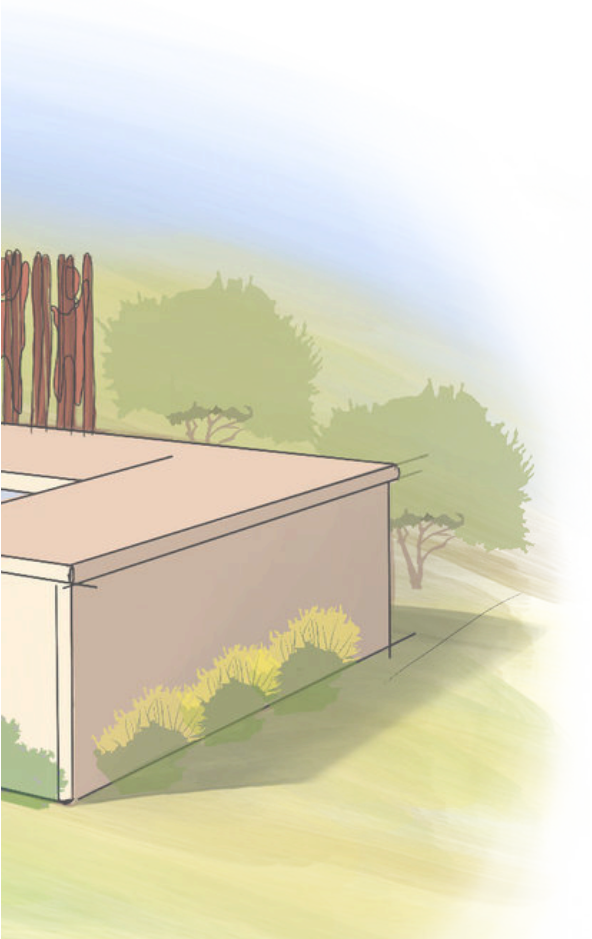


Nuragic Warrior Statue. Source: www.monteprama.it

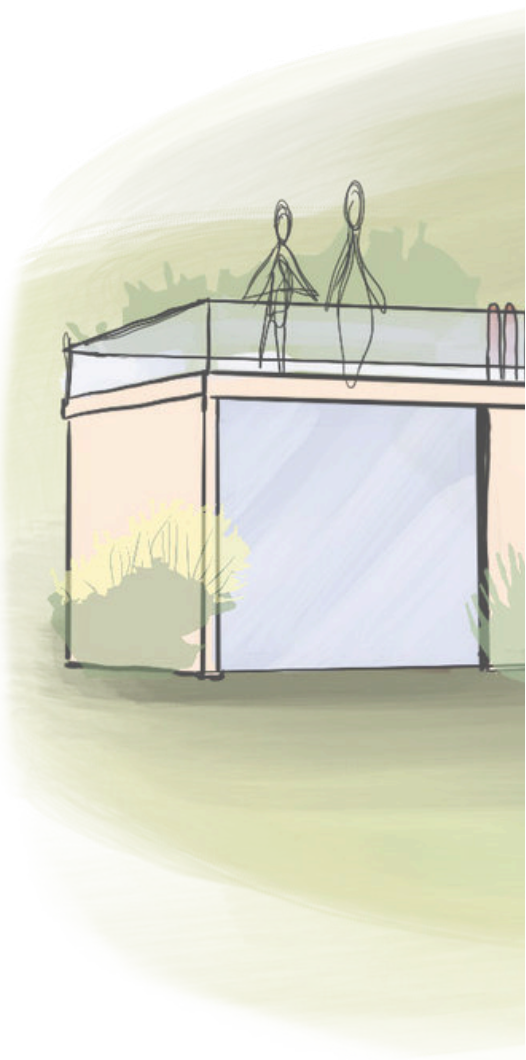
Logo design for the archaeological site project.

monte prama
SITO ARCHEOLOGICO

Inspired by the striking eyes and arched eyebrows of the Mont'e Prama Giants, the logo captures the essence of their **mysterious gaze** in a clean, stylized form. These iconic facial features, deeply symbolic and instantly recognizable, are reimagined as abstract graphic elements, evoking both the past and a contemporary visual language. The result is a minimal yet powerful mark that bridges archaeology and design.



Nuragic Warrior Statues. Source: www.monteprama.it

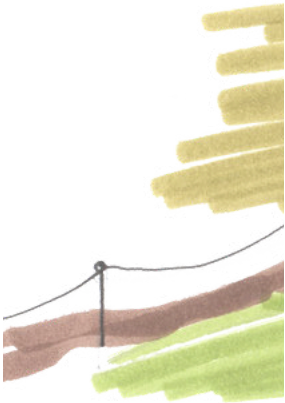


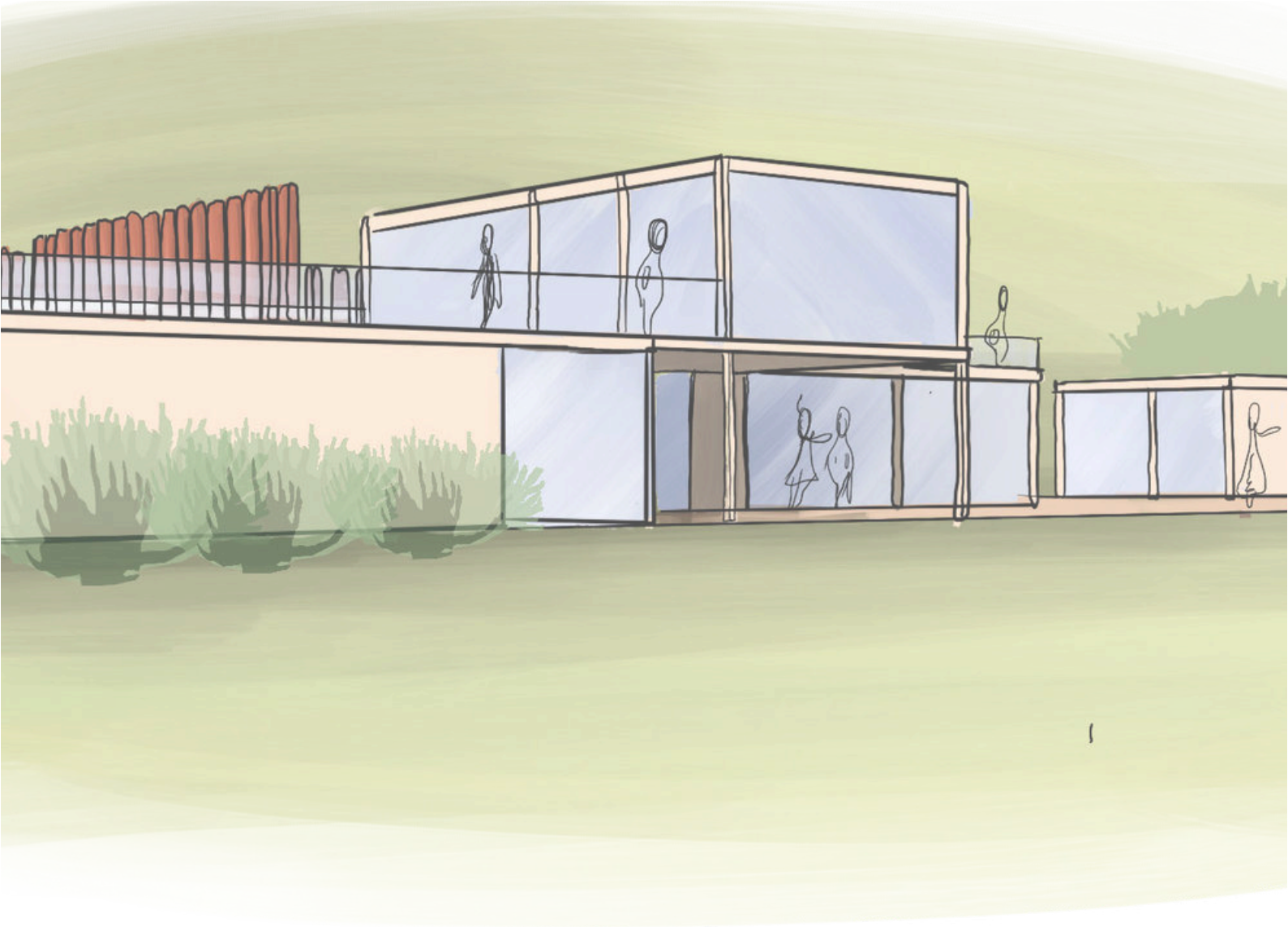
The project balances preservation, visitor access, and ongoing archaeological work. **Elevated walkways** allow safe exploration of the site without damaging the fragile remains, offering different views of the landscape and the necropolis. The design supports continuous excavations by **minimizing ground contact** and creating flexible spaces for researchers. This approach ensures the site remains a living, evolving place where history and discovery coexist.

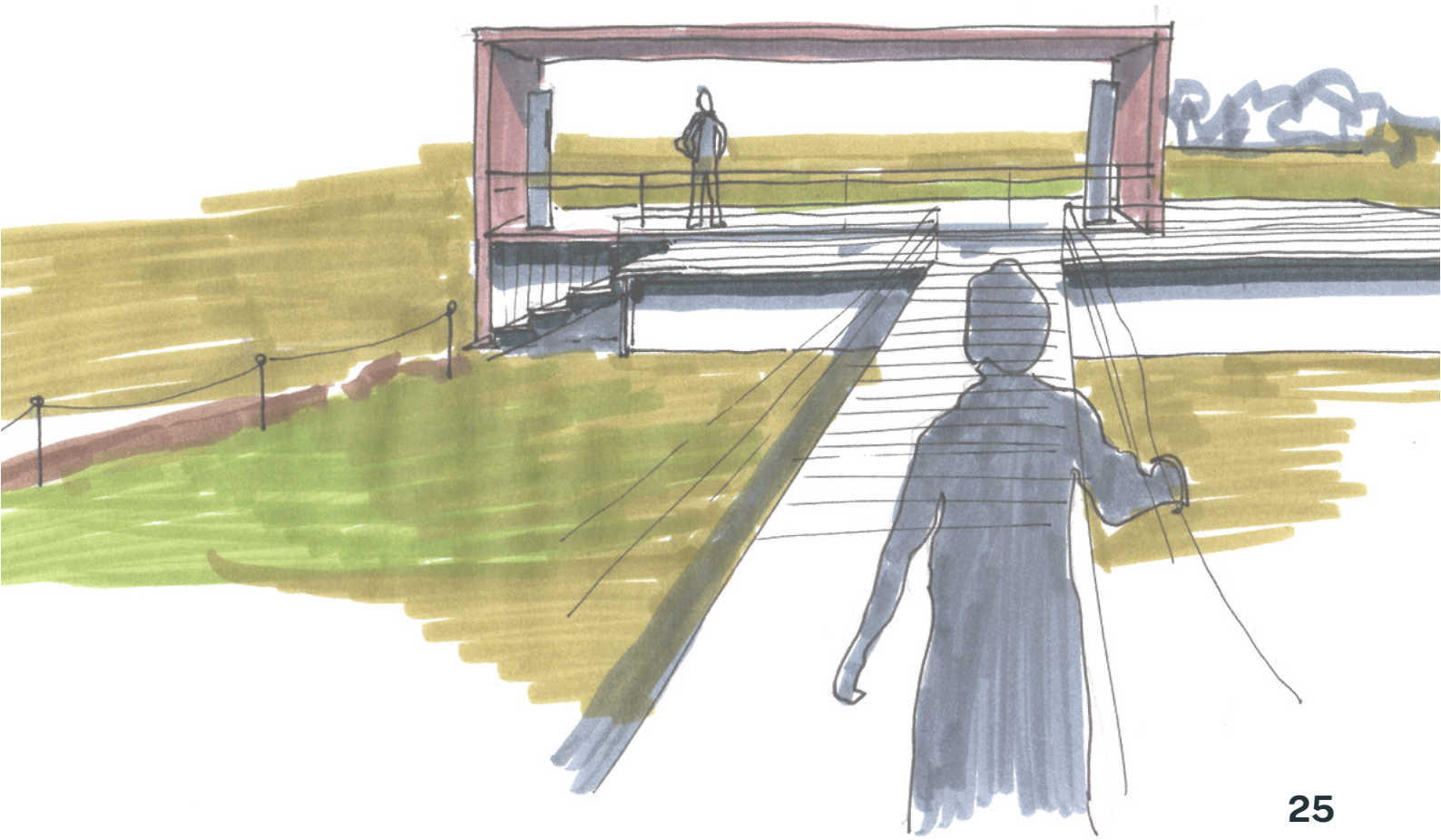
The modular container structures are used to host essential functions: an archaeological lab, a workshop area, an infopoint, a small café, panoramic terraces, and exhibition rooms.

A key feature is the vertical **corten steel wall**, serving as a visual landmark. Its rusted tones blend with the environment and symbolically represent the Giants, marking the site's entrance and giving it a strong, recognizable identity visible from nearby roads. The landmark also acts as a guide, inviting visitors into the rich cultural heritage of Mont'e Prama.

Mont'e Prama Archaeological Site – Project Area. Source: www.monteprama.it







Sketch of the elevated walkway.

North-West Elevation.

South-East Elevation.

Visual landmark of corten steel representing the Giants.

A4 CAPM – Contemporary Art Palma de Mallorca:

2024, Palma de Mallorca (ES).
Team: A. Fiore Rusconi, M. Baruffaldi, O. Fossati, S. Rebaioli, M. Riva
Supervisors: Profs. M. Ghilotti, A. Collet

The project proposes a **contemporary art museum** seamlessly integrated into the existing urban fabric of Palma de Mallorca. Designed as an L-shaped volume, the building generates a new elevated **public plaza** that naturally extends and connects to the adjacent square, ensuring continuity not only through materials and paving, but also through its civic role. This urban terrace, accessible via ramps and stairs, acts as both an open-air stage and a unifying threshold, shielding the museum from the disordered building façades nearby while inviting the city to engage with the space.

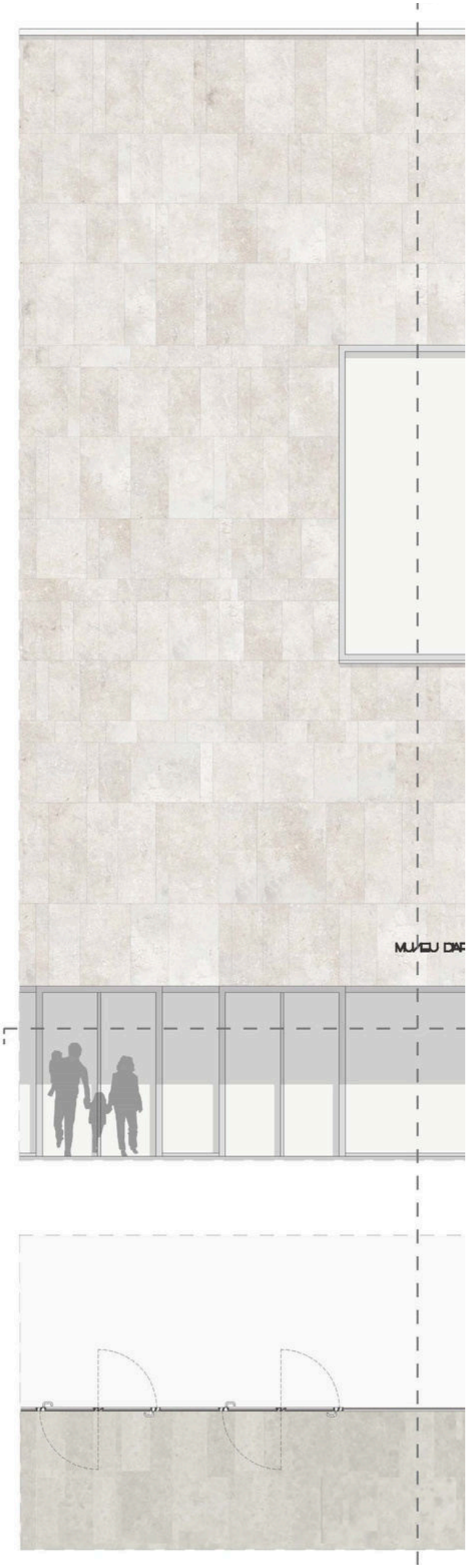
The museum rests lightly upon this **podium**, presenting a compact and introverted architectural form, defined by a solid sandstone envelope punctuated by a few carefully placed openings. These apertures are positioned in accordance with interior circulation and key views, including large ground floor windows that offer double height glimpses into the underground galleries. These visual connections stimulate curiosity and invite passersby to explore further.

While the museum's envelope is intentionally **opaque** to protect the artworks, selected openings offer moments of visual permeability and connection. This formal solidity becomes expressive after dark, when the building transforms into a luminous canvas for projected light, turning the architecture itself into a performative element of the museum experience.

Night view of the museum and the elevated public plaza.

At the heart of the building is the **central staircase**, an independent metallic structure that contrasts with the heavy stone walls. It serves both as a vertical circulation core and a spatial device, enriching the dialogue between local materiality and contemporary construction. Altogether, the project balances civic identity, architectural precision, and curatorial adaptability, establishing a new cultural landmark deeply rooted in the city's material and urban character.

The **underground level** hosts an essential part of the museum's program, including sections of the permanent collection and additional exhibition galleries. Though located below grade, these spaces avoid the typical pitfalls of subterranean environments thanks to carefully designed lighting strategies. A series of narrow, elongated skylights are embedded in the paving of the public plaza above, channeling natural light downward in precise, controlled beams. This system not only ensures a pleasant quality of light within the galleries, but also activates the plaza itself transforming it into a vibrant, luminous surface during the night, and offering intriguing glimpses into the activity below.



Blow-up highlighting the main entrance, the d

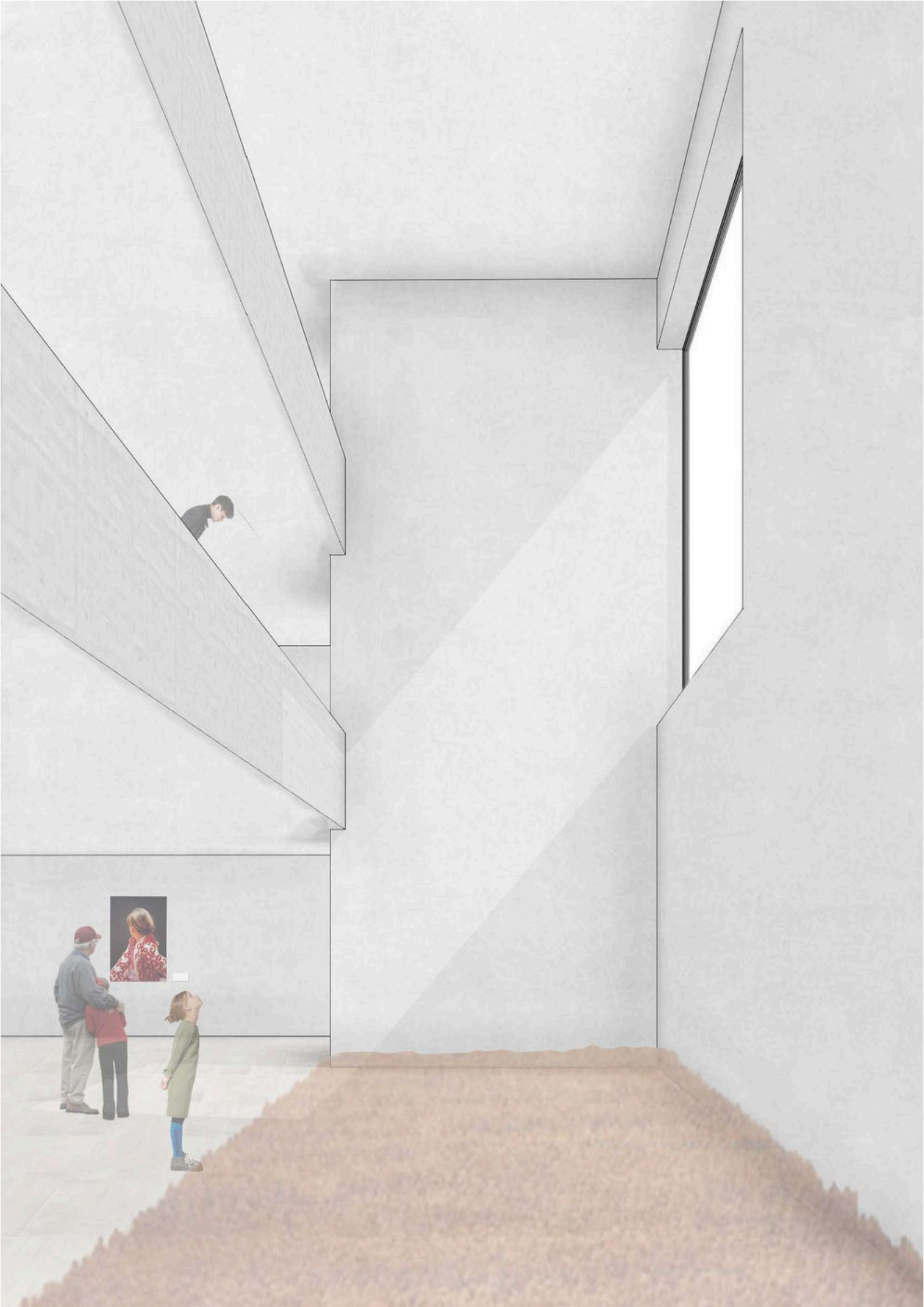
1. Facciata ventilata in pietra arenaria, sp. 10cm
2. Isolamento in pannelli di polistirene estruso, sp. 10cm
3. Strato portante in calcestruzzo armato, sp. 30cm
4. Rivestimento interno: contro parete in doppie lastre di gessofibra rivestite e intercapiedine per passaggio impiantistico, sp. 5cm
5. Elemento vetrato in alluminio con triplo vetro e intercapedine con argon

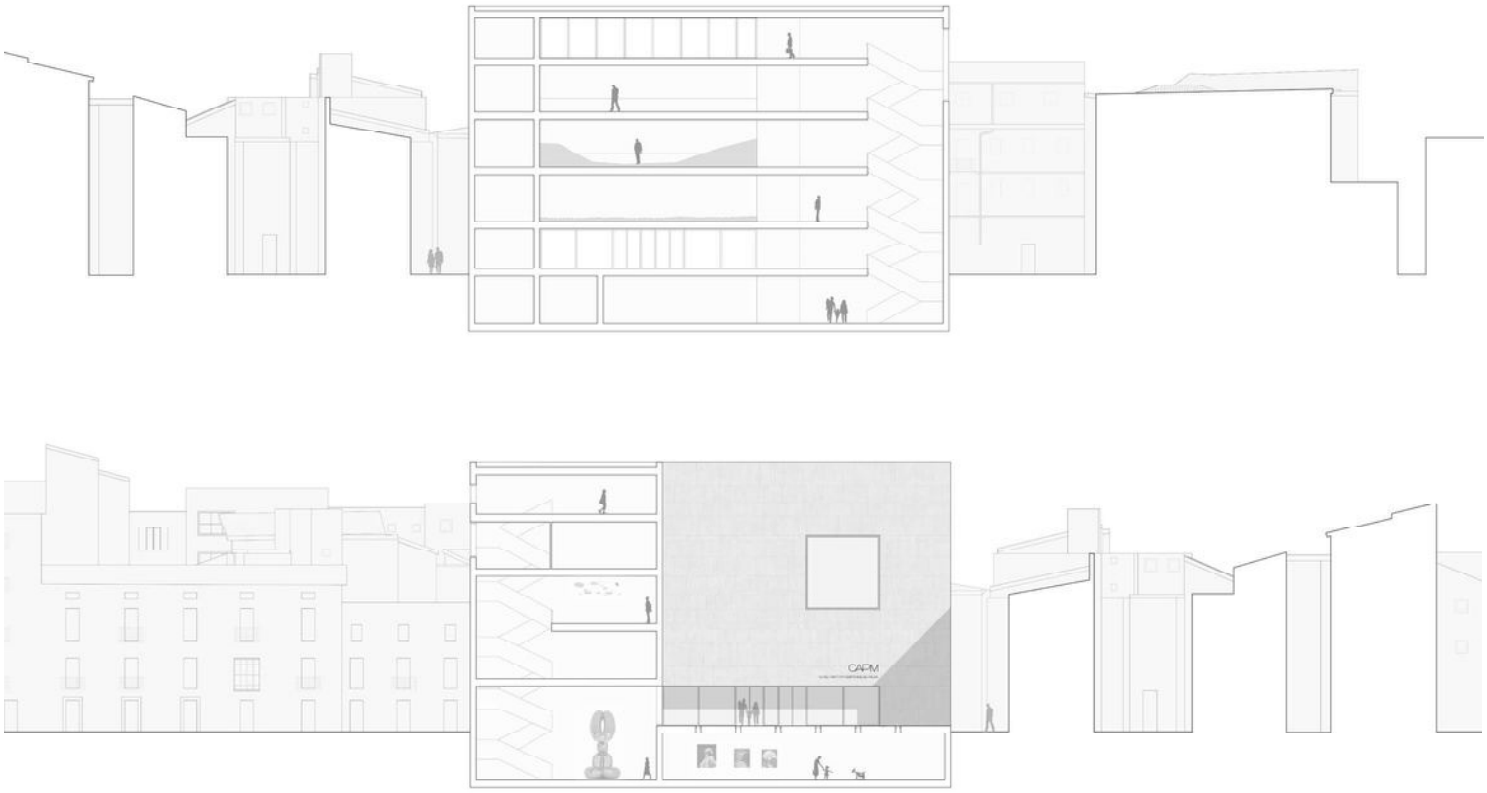
6. Rivestimento interno in resina, sp. 4cm
7. Massetto leggero per localizzazione tubi impiantistici, sp. 8-20cm
8. Controsoffitto con pannelli in lana di roccia e lastre in cartongesso, sp. 16cm

9. Rivestimento esterno in gres porcellanato, sp. 2cm
10. Isolamento in pannelli di polistirene estruso, sp. 8cm

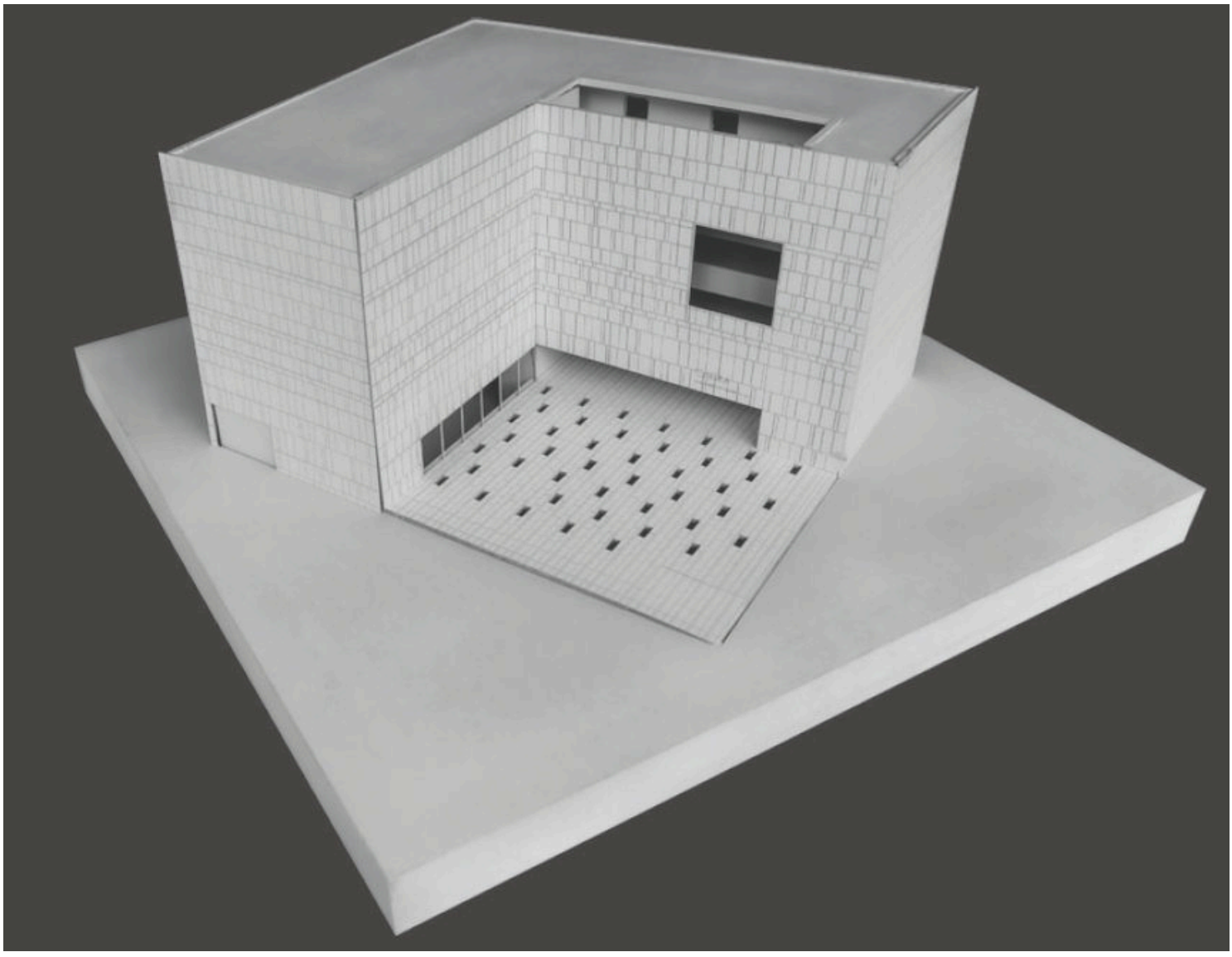
11. Magrone di calcestruzzo, sp. 6,5cm
12. Vespaio areato, sp. 55cm

uble-height space, and the top floor terrace.





Cross-sections through both wings of the L-shaped volume.



Architectural model made of natural cardboard.

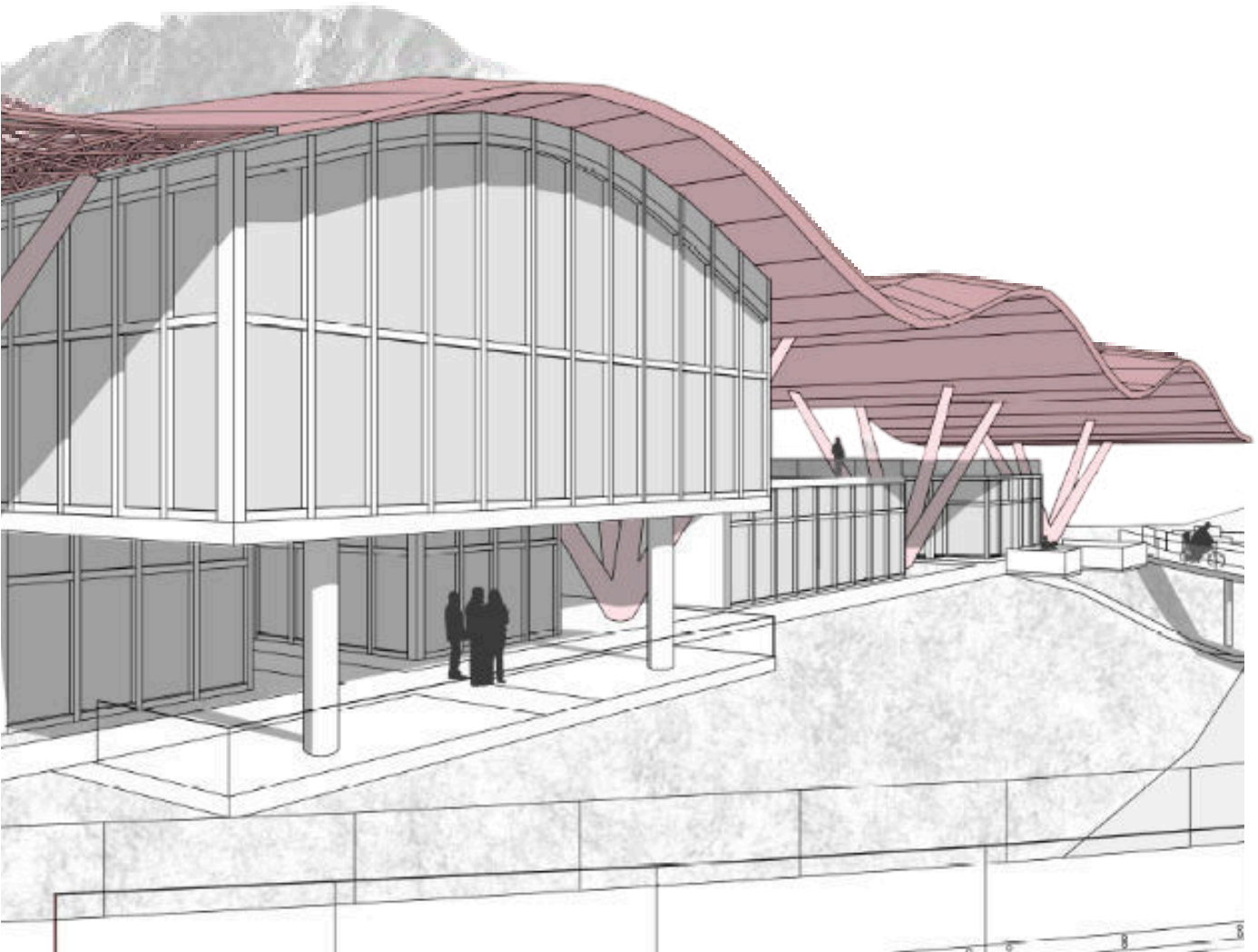
A5 INTERSEZIONE URBANA:

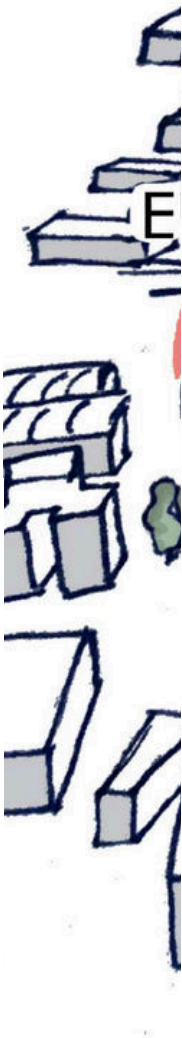
2021, Galbiate (IT)
Team: A. Fiore Rusconi, M. Baruffaldi, A. Battisti, L. Bernasconi, A. Ghezzi, C. Piazza, M. Stevenazzi, I. Tsymbalyuk
Supervisors: Profs. G. Iannaccone, G. Masera, E. Seghezzi

The project envisions a **multipurpose center** between lake and mountain, designed to host a variety of public functions while maintaining a strong relationship with the natural and urban context.

The intervention consists of **five distinct volumes** distributed along a pedestrian landscape, connected by walkways and a lakeside cycling path. The central building, organized on three levels, contains the library, while the surrounding pavilions accommodate exhibition areas, a restaurant, and congress halls.

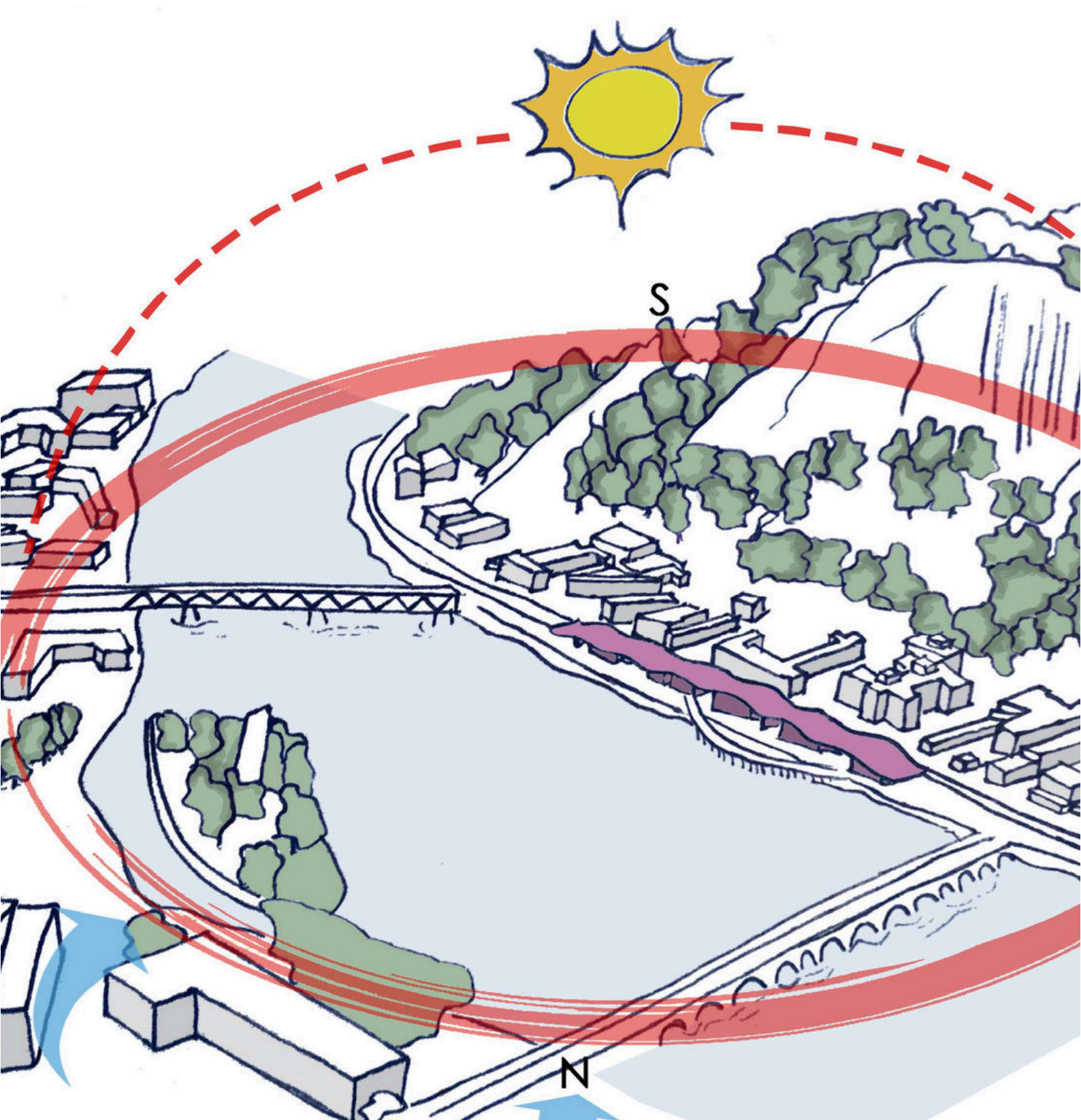
A continuous **undulating roof** unifies the ensemble both formally and functionally. Made up of photovoltaic panels, glass surfaces, and composite elements, it acts as an energy-generating skin while also collecting rainwater, which is conveyed through the structural columns for reuse.

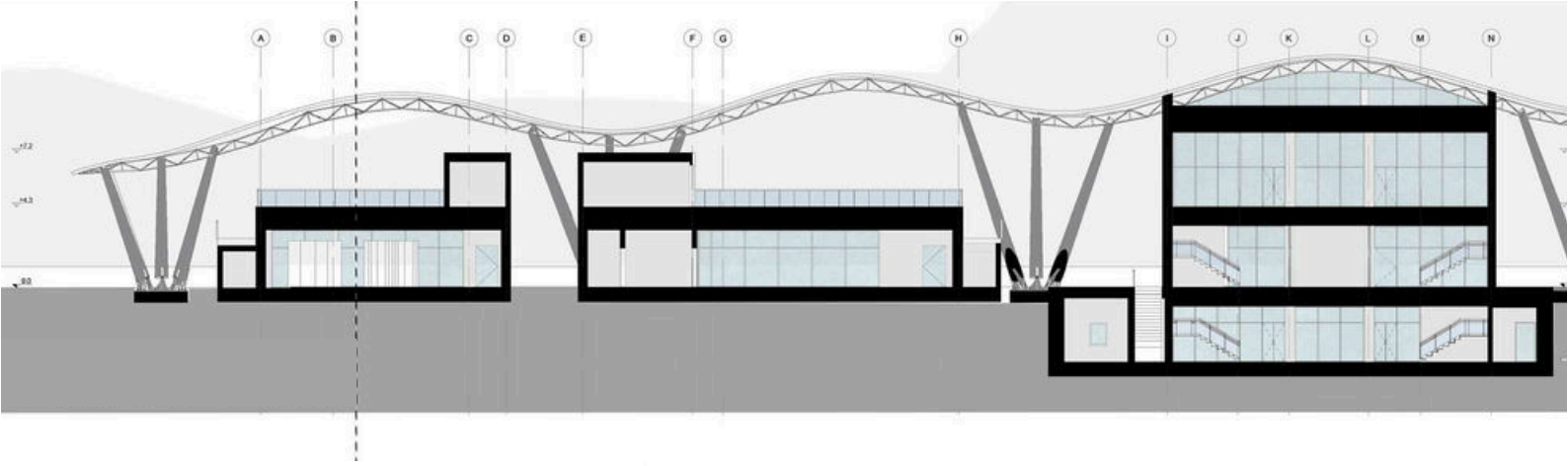




From early design stages, particular focus was placed on material choices, passive strategies, and **solar shading systems**, in order to optimize thermal comfort and energy performance in both summer and winter.

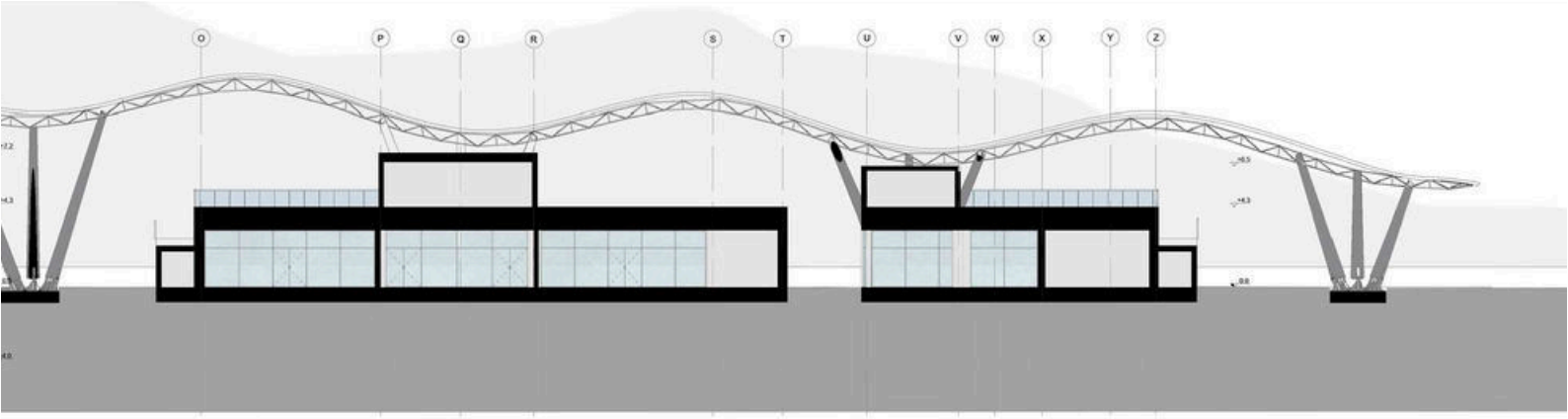
The climatic conditions of the site were thoroughly analyzed to inform energy-efficient design choices and ensure year-round environmental comfort. The project integrates architectural expression and technical rigor, offering a high efficiency solution tailored to the complexity of the site and its multiple uses.

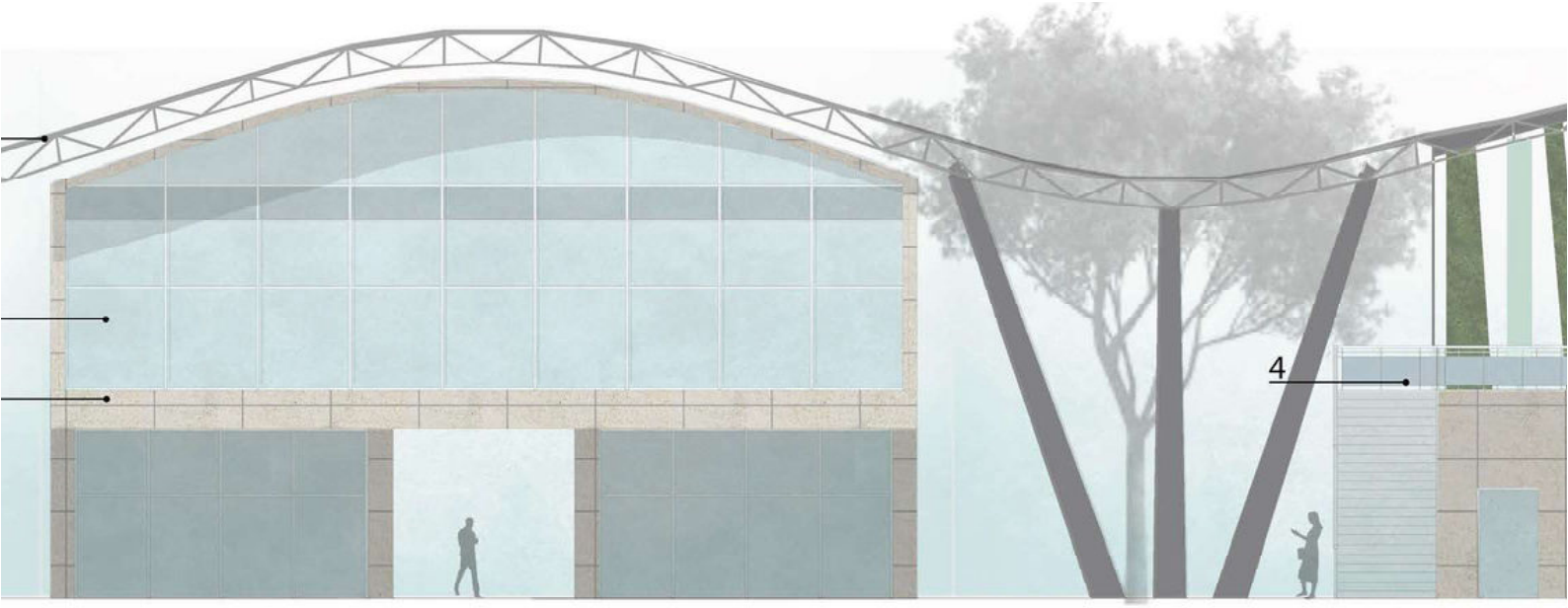


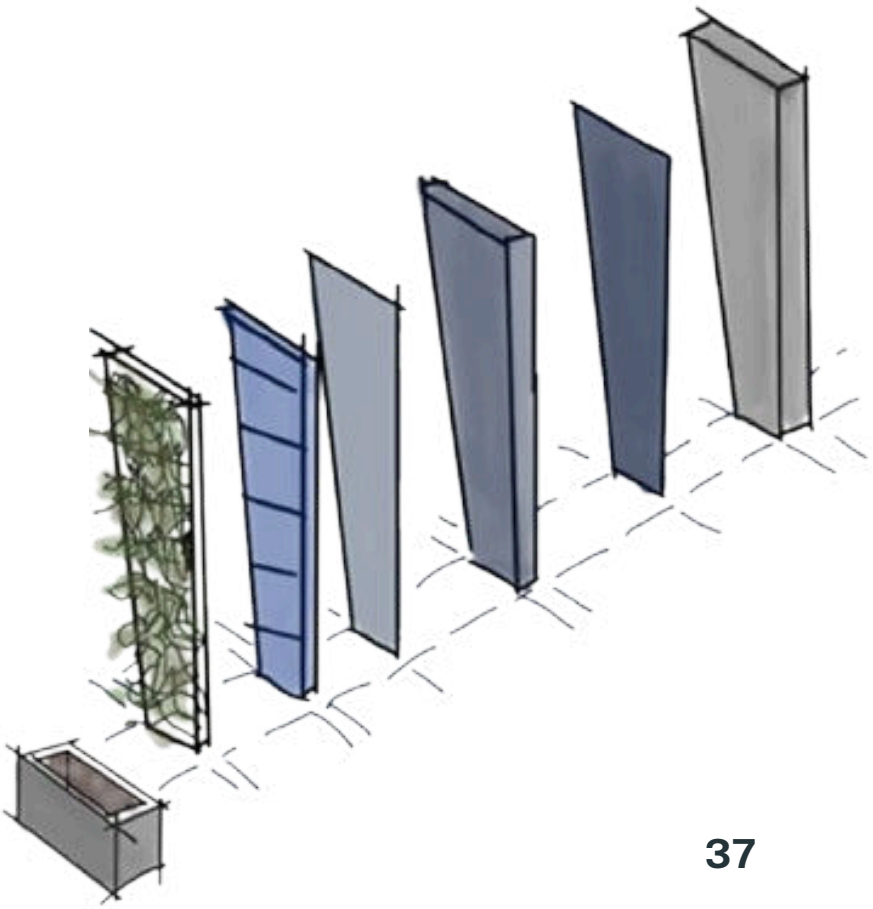

A
B
C
D
E
F
G
H
I
J
K
L
M
N

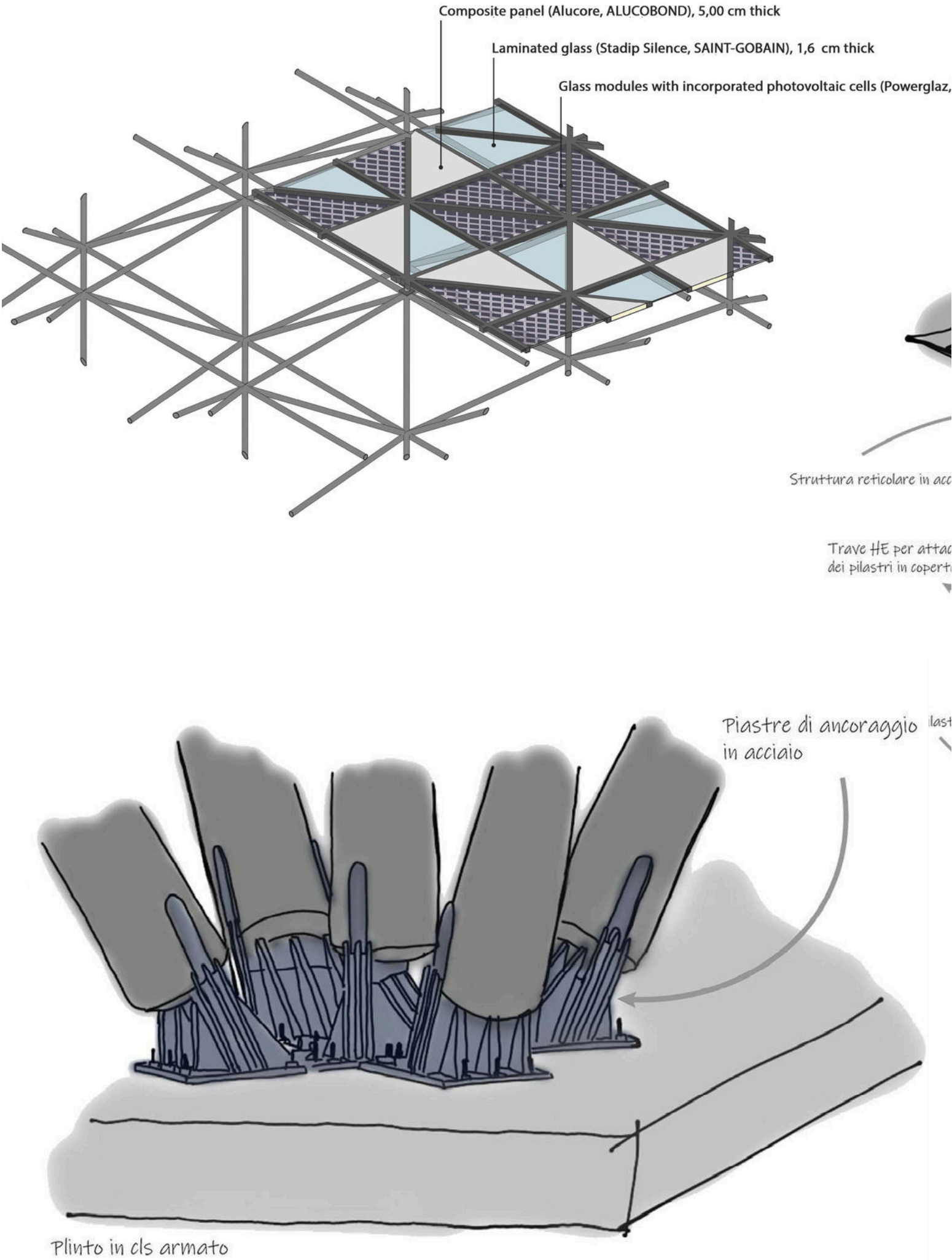
3
2
1

7


O
P
Q
R
S
T
U
V
W
X
Y
Z

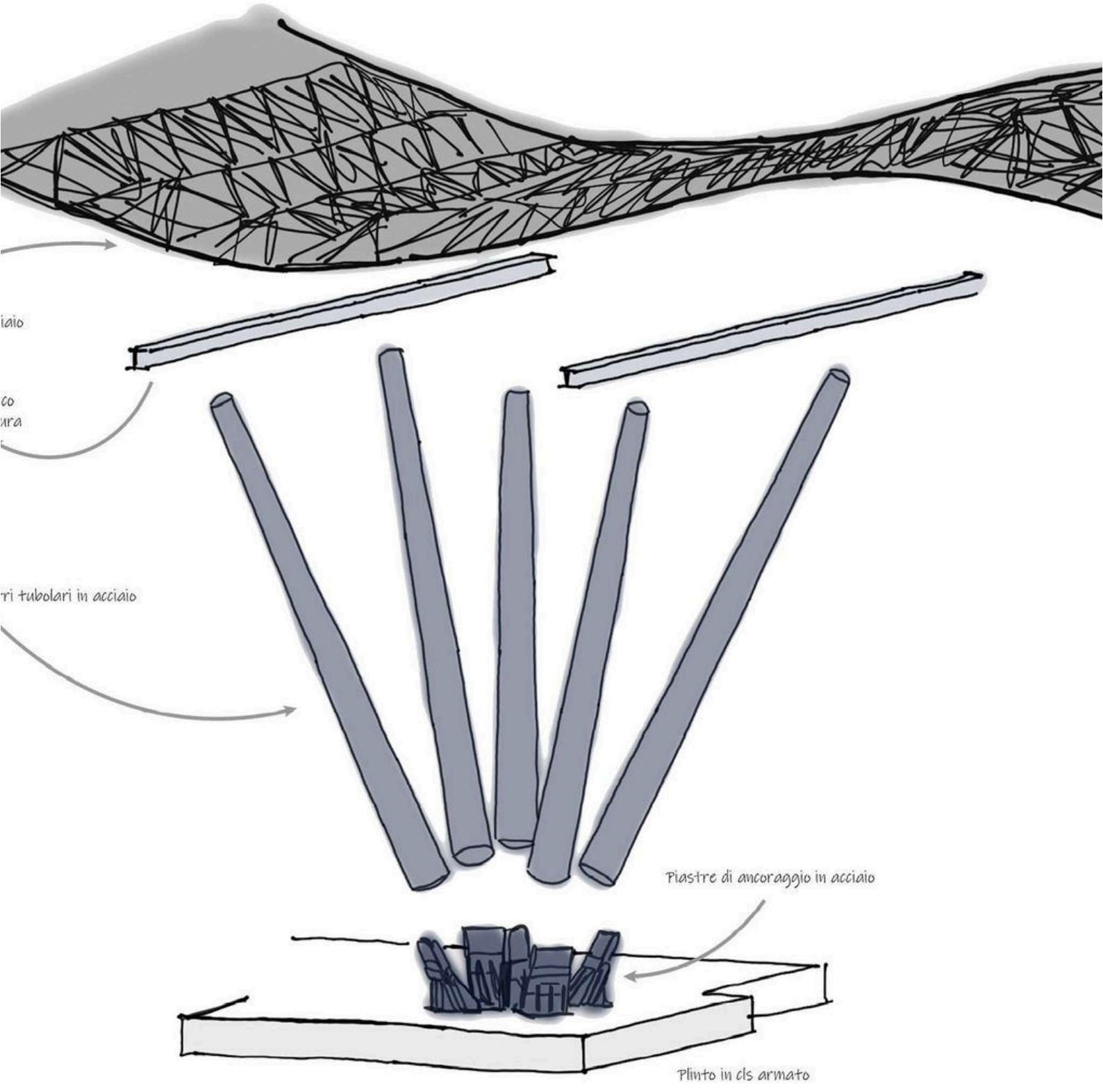

4




Composite panel (Alucore, ALUCOBOND), 5,00 cm thick
Laminated glass (Stadip Silence, SAINT-GOBAIN), 1,6 cm thick
Glass modules with incorporated photovoltaic cells (Powerglaz,
Struttura reticolare in acc
Trave HE per attac
dei pilastri in coperti
Piastre di ancoraggio
in acciaio
Plinto in cls armato

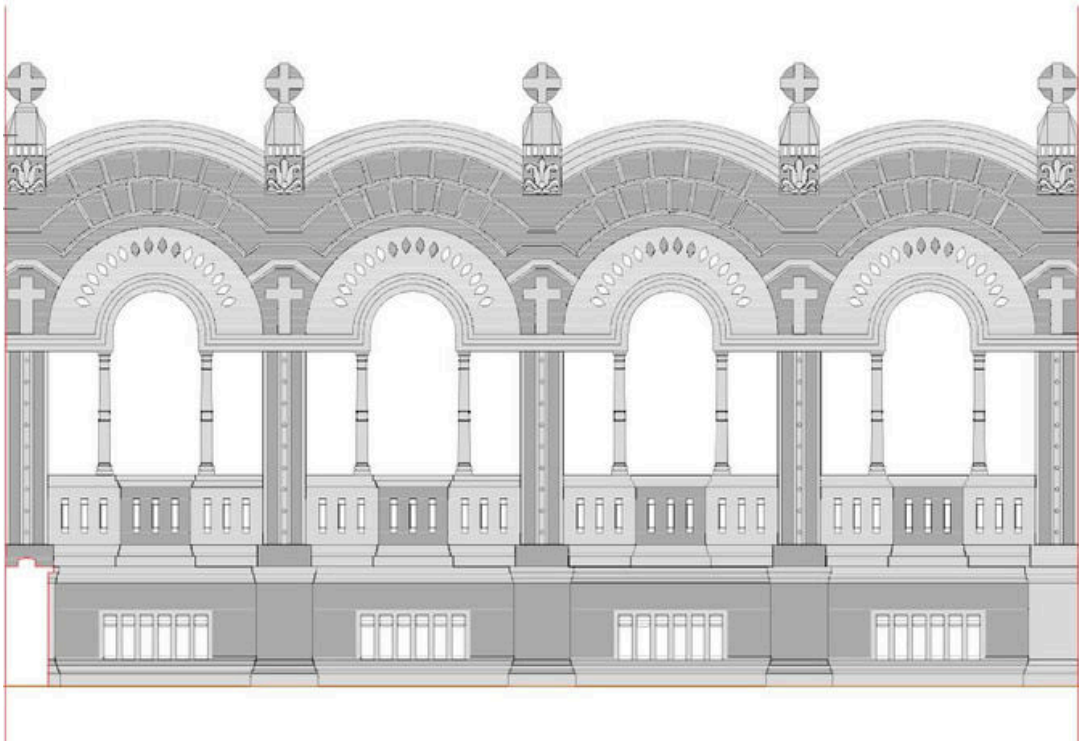
3D representation of the roof structure and its modular cladding system.

TECHNIGLAZ), 1,6 cm thick



B1 CONSERVATION STUDY OF LAORCA CEMETERY:

2022, Lecco (IT).
Team: A. Fiore Rusconi, M. Baruffaldi, M. Garde, G. Mareau, Y. C. Wong
Supervisors: Profs. E. Rosina, E. Baccega



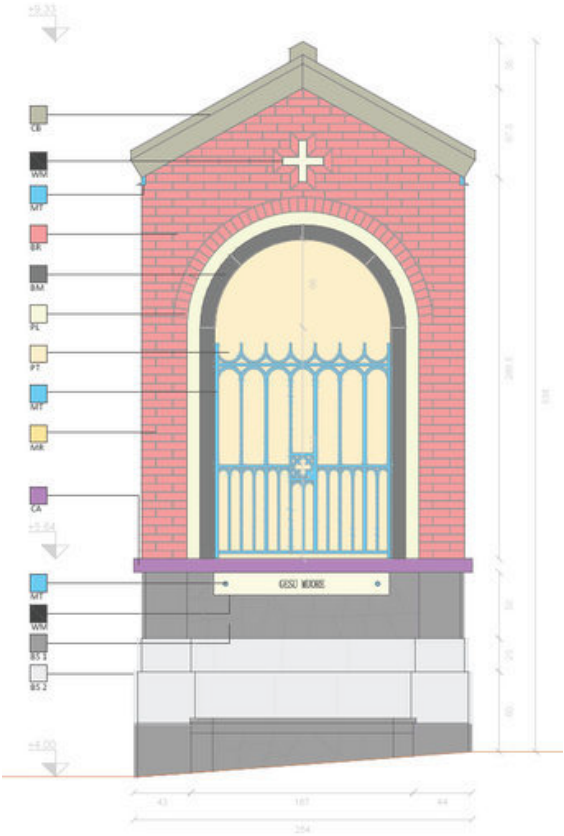
Drawings of the famedio, highlighting material surveys and areas of degradation..

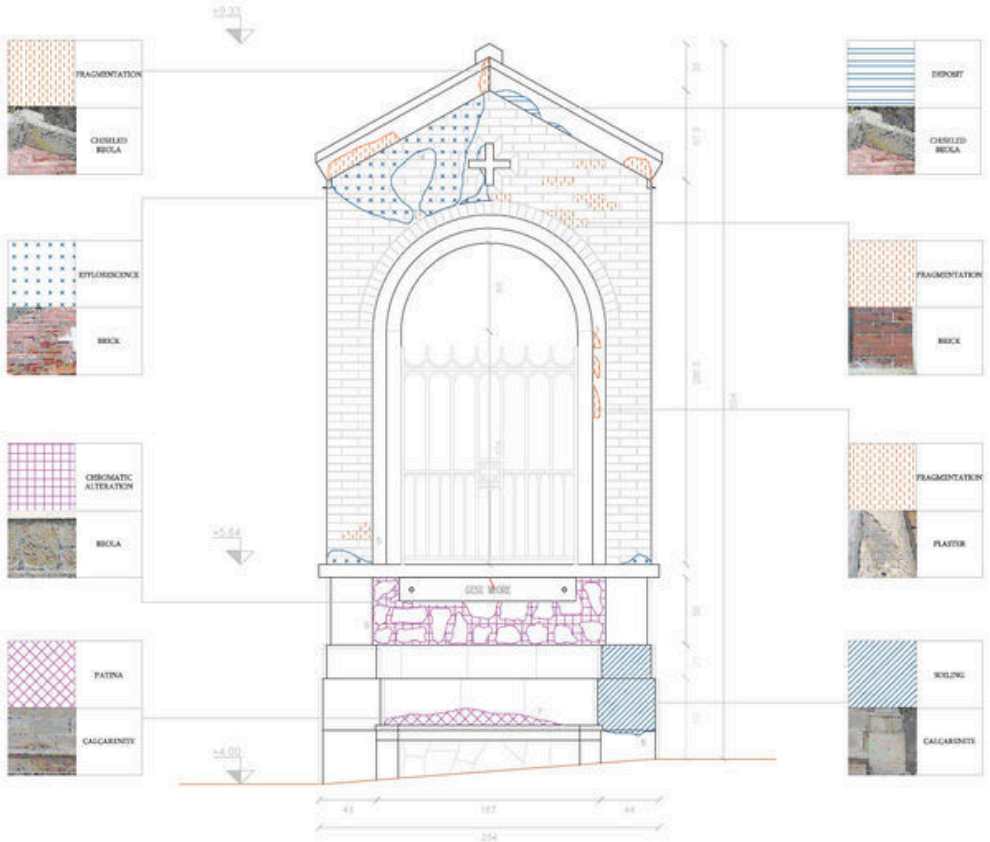
The conservation studio project for the Laorca cemetery focused initially on detailed field surveys using traditional measuring tapes, laser devices, and photographic documentation. These tools allowed us to accurately draw the elevations of the main façade, the chapels, the famedio and the small church, which served as the foundational base for subsequent **material surveys** and **degradation assessments**.

Building on this data, we developed tailored solutions addressing the various types of deterioration observed. A detailed cost estimate was prepared, incorporating official price lists and measurements of decay, which enabled us to calculate the overall expenses for all necessary **restoration operations** and materials. This comprehensive analysis provided a reliable budget estimate aimed at restoring the architectural elements as closely as possible to their original splendor.

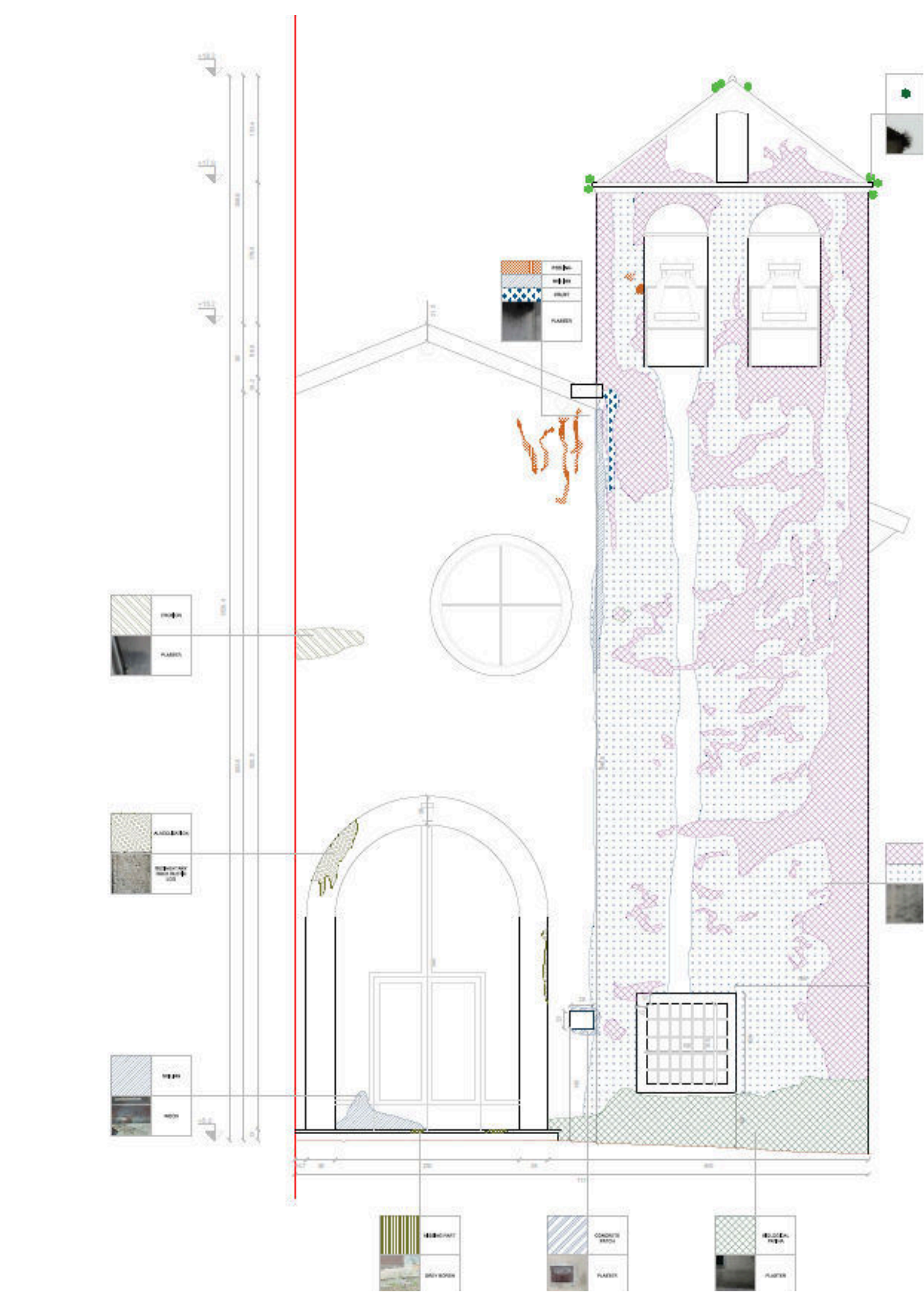
Additionally, the project included a small scale proposal to enhance accessibility within the cemetery. This involved designing a more accessible path for people with disabilities and installing interpretative stations to enrich visitors' experience.

Picture and drawings of a chapel, highlighting material surveys and areas of degradation.





Aerial view of Laorca Cemetery. Source: www.lecconews.news



Drawings and picture of the church, highlighting areas of degradation.

C1 FINCA EL ZOPILOTE:

2024, Ometepe Island (NI).
Volunteer work: Supporting the manual construction of eco-cabañas using natural and local materials
Hosts: C. Bianchi, D. Bianchi

The main volunteering activity consisted in supporting the manual construction of **eco-cabañas** using local and natural materials. The building technique, known as *construir con el barro*, involved a mixture of volcanic stones, earth, zacate (dried bamboo leaves or coconut fiber) and horse manure, which was used for its strengthening properties.

The process required careful material selection and preparation, including sieving the earth to obtain a fine, workable mix. Although labor-intensive and relatively costly, this method reflects strong ecological awareness and a deep respect for local traditions.

This approach aligns with **permaculture principles**, promoting sustainability, resource efficiency, and harmony with the natural environment.

C2 LONG WAY HOME:

2024, Ometepe Island (NI).
Volunteer work: Assisting in sustainable construction using eco-bricks and natural building techniques
Hosts: M. Paneitz, A.Howland

The experience involved hands-on support in the building process of educational infrastructure at the **"Hero School"**, a project by Long Way Home that integrates sustainability with community development. The main construction technique centered on the use of **eco-bricks**: plastic bottles densely packed with non-biodegradable waste such as plastic wrappers and packaging materials. These eco-bricks serve as an innovative and accessible building solution, helping to address the urgent issue of waste management in Guatemala, where formal recycling systems are often lacking.

To turn the eco-bricks into structurally sound walls, they are bound together using a **natural mixture** made of locally available materials such as earth, sand, water, and either pine needles or straw. This method minimizes the use of cement and industrial materials, reducing environmental impact and promoting local resilience. The resulting "**eco-walls**" are durable and effective in regulating indoor temperatures, contributing to both environmental and human comfort.

The value of this work lies not only in its ecological approach but also in its **strong social impact**. LWH provides a powerful example of circular economy and community empowerment, combining environmental awareness, traditional building methods, and social engagement to create meaningful, lasting change.

Agnese Fiore Rusconi

3341886871
agnesefiore99@gmail.com